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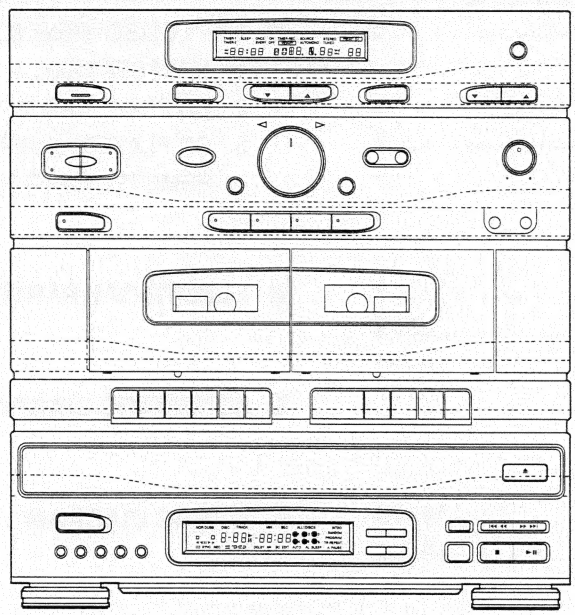
UNIVERSUM

SERVICE MANUAL
MODEL: VTC-4635

HI-FI MUSIC CENTER WITH COMPACT DISC PLAYER



SPECIFICATION

GENERAL

Power Consumption	:	90W
Dimension	:	360(W)x357(H)x380(D)
Weight (NET)	:	10.2Kg
Power source	:	See the label rating

RADIO

LW BAND

Frequency Range	:	146KHz~290KHz
Usable Sensitivity	:	900μV
Signal to Noise Ratio	:	35dB

MW BAND

Frequency Range	:	522KHz~1611KHz
Usable Sensitivity	:	600μV
Signal to Noise Ratio	:	40dB

FM BAND

Frequency Range	:	87.5MHz~108MHz
Usable Sensitivity	:	6μV
Signal to Noise Ratio	:	60dB
Total Harmonic Distortion	:	0.5%
Separation	:	30dB

TAPE (RECORD/PLAYBACK)

Frequency Range	:	125Hz~8KHz
Signal to Noise Ratio	:	40dB
Separation	:	35dB
Total Harmonic Distortion	:	3%
Erasing Effect	:	50dB
Wow & Flutter	:	0.3%

COMPACT DISC PLAYER

Signal to Noise Ratio	:	90dB
Total Harmonic Distortion	:	0.01%
Channel Separation	:	80dB
D/A Conversion	:	1 Bit

AUDIO

Output power (THD 10%)	:	20W/CH
Frequency response	:	20~20,000Hz
PRESET EQ	:	JAZZ,ROCK,CLASSIC POP
S/N Ratio	:	80dB

* *Design and specifications are subject to change upon improvement without prior notice.*
* *Frequency range in radio section can be a little different from the above in accordance with frequency step or region.*

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■ SAFETY PRECAUTION

1. CLASS1 LASER PRODUCT

This compact disc player is classified as a CLASS 1 laser product.

2. LASER WARNING LABEL

The label shown below may be affixed or not according to country.

(UL)

This Product Compiles with DHHS Rules 21CFR, Sub chapter J.At date of Manufacture.

(CSA)

CERTIFIED ONLY TO CANADIAN ELECTRICAL CODE.

CERTIFIE EN VERTU DU CODE CANADIAN DE LELETRICITE SEULEMENT

(EU)

CLASS 1
LASER PRODUCT

Location : Enclosure back.

(SCAN)

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

(EU)

UL	:	Manufactured for U.S.A. Market.
EU	:	Manufactured for European Market
SCAN	:	Manufactured for Scandinavian Market.

Location : on the disc clamper or inner side of CD door or nearby CD chassis.

3. LASER BEAM WARNING

ADVERSEL — USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING — OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRALEN ÄR FARLIG.

VARITUS — LAITE SISÄLTÄA LASERDIODIN, JOKA LÄHETTÄÄ NÄKYMÄTÖNTA SILMILLE VAARALLISTA LASERSATEILYÄ.

CAUTION — INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

4. LASER DIODE SPECIFICATION (OPTICAL PICK-UP)

- o Material: AlGaAs
- o Wavelength: 760-800mm
- o Emission duration: Continuous
- o Laser Output: 0.2mW
- o * This output is the value measured at distance 1.6mm from the objective lens surface on the optical pick-up block.
- o Classification: CLASS 1

5. WARNING FOR SERVICING

WARNING: When servicing, do not approach the LASER exit with the eye too closely. In case it is necessary to confirm LASER beam emission, be sure to observe from a distance of more than 30cm from the surface of the objective lens on the optical pick-up block.

VARNING: När underhållningsarbeten utförs, närma dig försiktigt och se inte på laserutstrålningen på för nära håll. Ifall det är nödvändigt att betrygga laserstrålens utströmning. Var säker att kontrollera detta från ett avstånd av mer än 30cm (11.81 inch.) från den objektiva linsens yta på den optiska utsåndningspunkten.

ADVARSEL: Når repareringsarbejdet udfoeres, naerm dig forsigtigt og se ikke på laserudstrålingen på for naer hånd. It ilfaeldet at det er noedvaendigt at bestemme laserstrålens udstråling. Vaer sikker på kontrollere dette fra en afstand af mere end 30cm (11.81 inch.) fra den objektive linses overflade på den optiske udsendningspunkt.

VAROITUS: Silmiä on varottava viemästä liian läbeiie Laser-poistokanavaa huoiion aikana. Jos on välttämätöntä varmistaa Laser-Säteen päästö, pysyttels sitä tarkasteltaessa vähintään 30cm etäiyydellä optisen lukon objecktiivilinssin pinnasta.

■ SERVICING NOTE

1. Prevent shock hazard by unplugging power supply cord before opening cabinet.
2. Avoid repairing under direct sunshine and heat which may cause cabinet, transistor and IC to be transformed or misoperate.
3. Use a soft cotton swab moistened with warm water or neutral cleaner when parts of unit need to be cleaned.
4. When replacing parts with safety features built in, be sure to use specified parts with same specs only.
5. Avoid repairing the set near TV or any other magnetic forces.
6. Disconnect plug from wall socket during electric storm to reduce the risk of damage.
7. Be careful of electrostatic source when using control IC.
8. Be sure not to separate the pick-up from the unit.

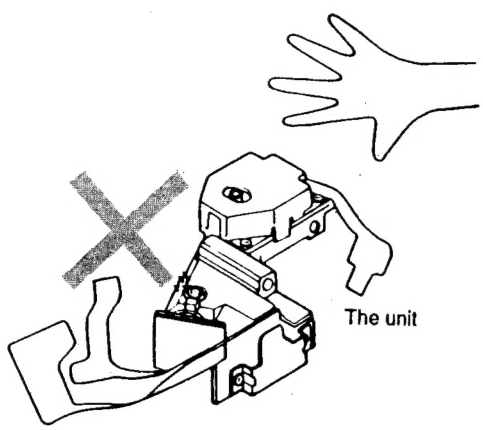
HANDLING THE OPTICAL PICK-UP

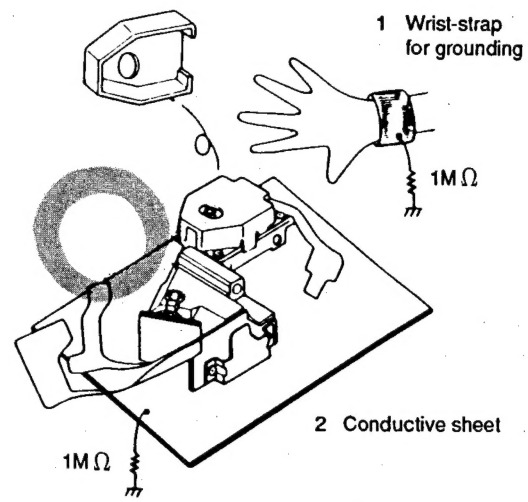
The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

1. Place a conductive sheet on the work bench (The black sheet used as wrapping for repair parts).
2. Place the set on the conductive sheet so that the chassis is grounded to the sheet.
3. Place your hands on the conductive sheet (This gives them the same ground as the sheet).
4. Remove the optical pick up block.
5. Perform work on top of the conductive sheet.
   Be careful not to let your clothes or any other static sources to touch the unit.

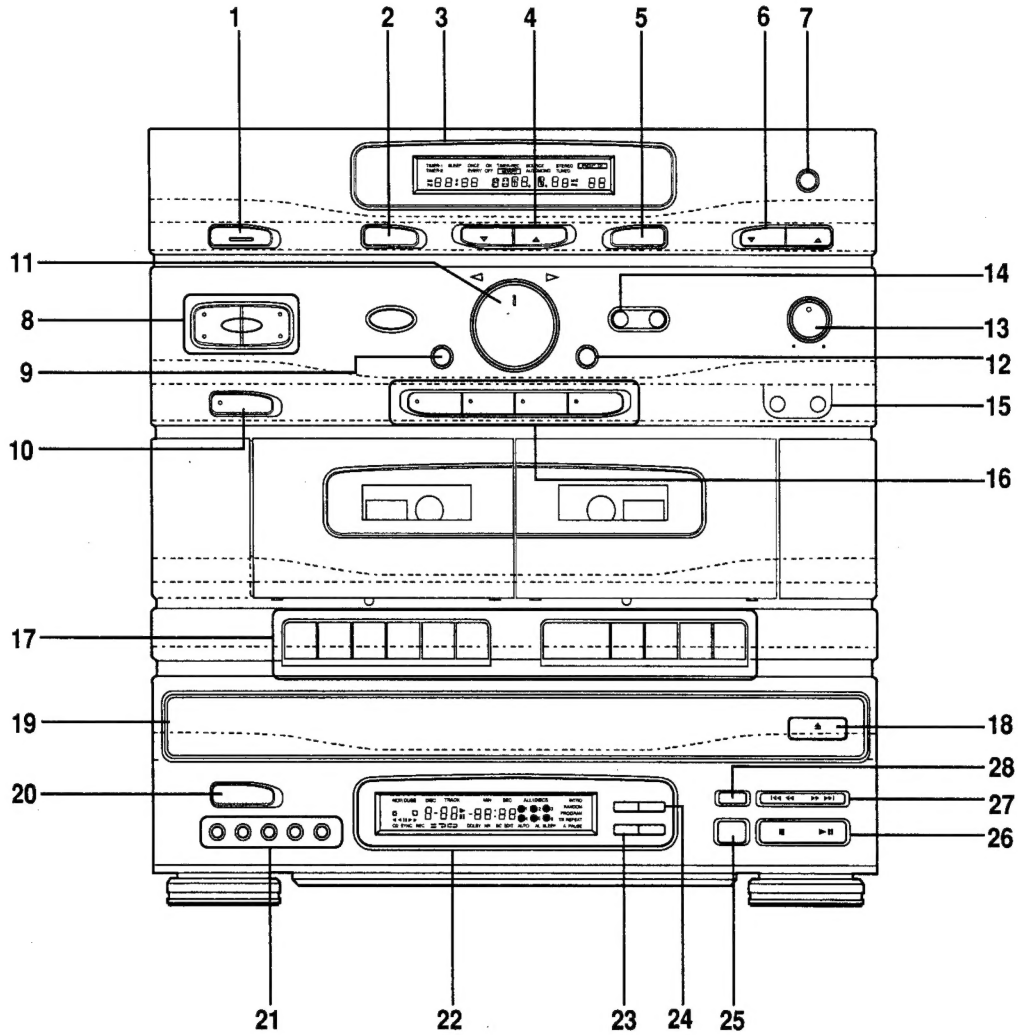
   * Be sure to put on a wrist strap grounded to the sheet.
   * Be sure to lay a conductive sheet made of copper etc. which is grounded to the table.





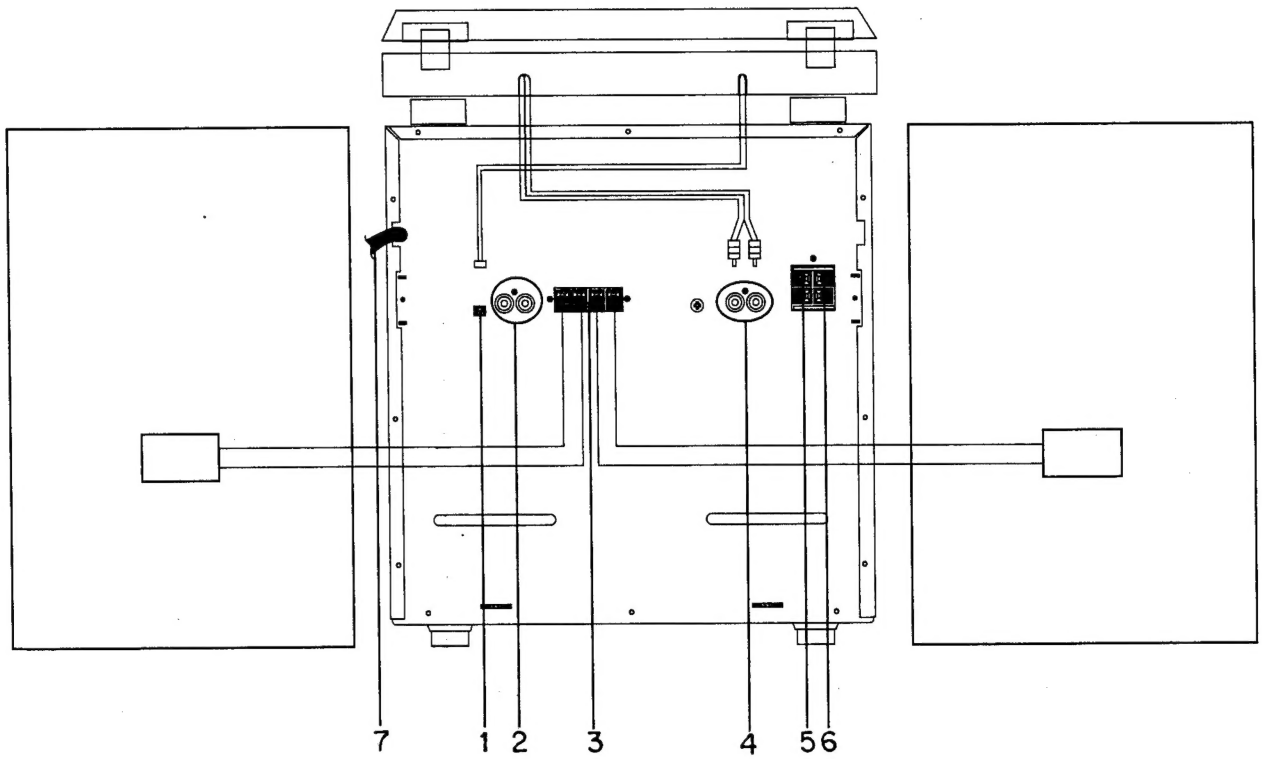
■ LOCATION OF CONTROLS

1. FRONT VIEW



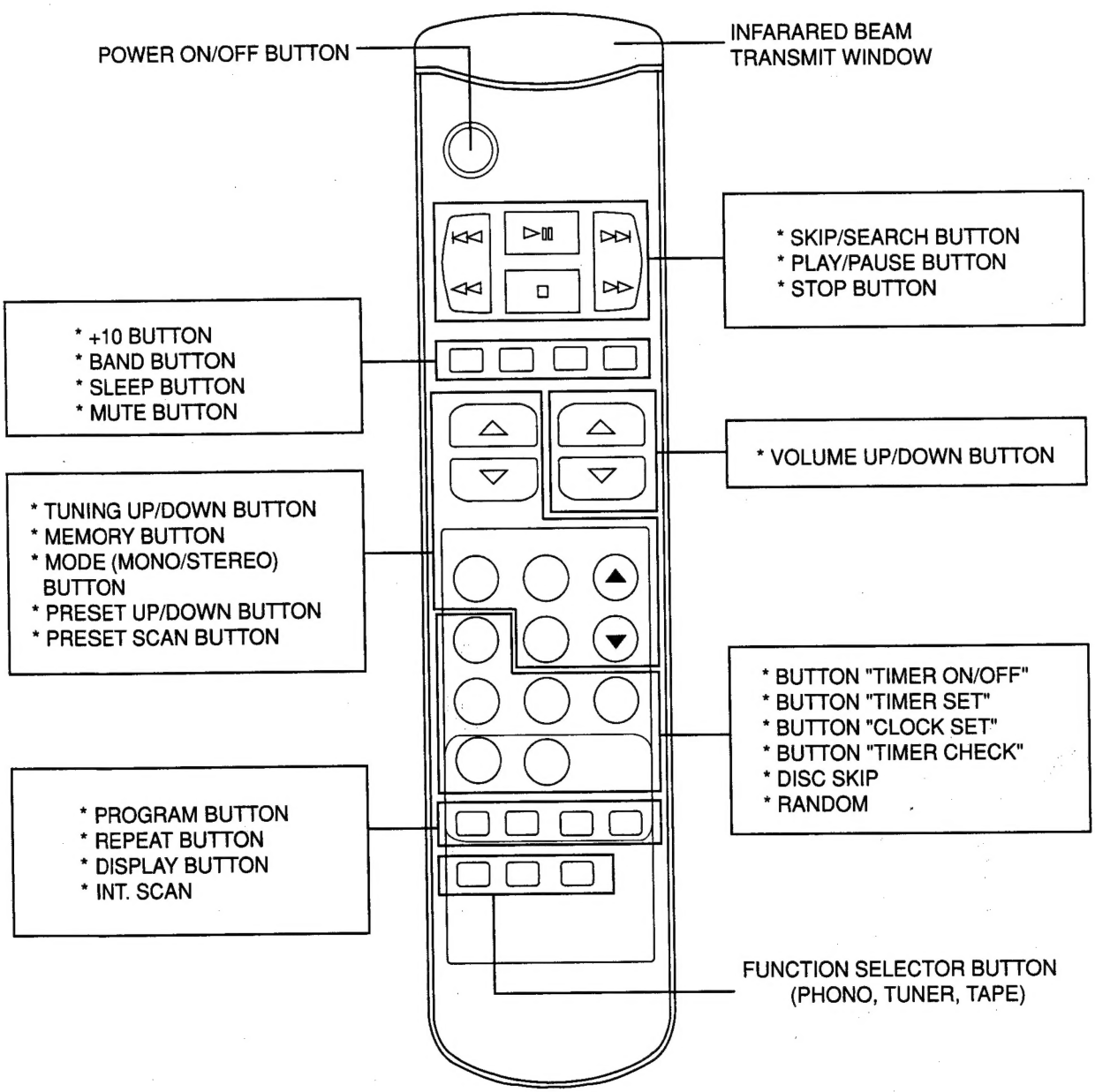
1. POWER BUTTON
2. BAND BUTTON (FM/AM)
3. TIME/TUNER DISPLAY
4. PRESET UP/DOWN BUTTON
5. MEMORY BUTTON
6. TUNING UP/DOWN BUTTON
7. MONO/STEREO BUTTON
8. EQ KEY BUTTON
9. SURROUND BUTTON
10. EQ PASS BUTTON
11. VOLUME
12. C.F.B.S
13. BALANCE VOLUME
14. Hi SPEED DUBBING/TAPE SELECTOR BUTTON
15. HEADPHONE/MIC JACK
16. FUNCTION SELECTOR BUTTON
17. DECK A/B
    - RECORD BUTTON
    - PLAY BUTTON
    - REWIND BUTTON
    - FAST FORWARD BUTTON
    - STOP/EJECT BUTTON
    - PAUSE BUTTON
18. OPEN/CLOSE BUTTON
19. CD DOOR
20. DISC SKIP BUTTON
21. DISC SELECTOR BUTTON
22. CD DISPLAY
23. RANDOM PLAY/INTRO SCAN BUTTON
24. DISPLAY/+10 BUTTON
25. REPEAT BUTTON
26. ■ : STOP/CLEAR BUTTON
    ▶II : PLAY/PAUSE BUTTON
27. I◀◀ : BACK SKIP/SEARCH BUTTON
    ▶▶I : F. SKIP/SEARCH BUTTON
28. PROGRAM BUTTON

2. REAR VIEW



1. DC JACK (T/T)
2. SURROUND SPEAKER JACK (L,R)
3. SPEAKER TERMINAL (L,R)
4. PHONO JACK (L,R)
5. FM ANTENNA JACK
6. AM ANTENNA JACK
7. POWER CORD

3. REMOTE CONTROL



■ DISASSEMBLY INSTRUCTION

* Be sure to remove power cord befor disassembling the player

1. TOP CABINET & REAR CABINET - FIG.1 -

1) Release 7 screws (①).
2) Remove TOP CABINET (direction A).
3) Release 14 screws (②).
4) Remove REAR CABINET (direction B).

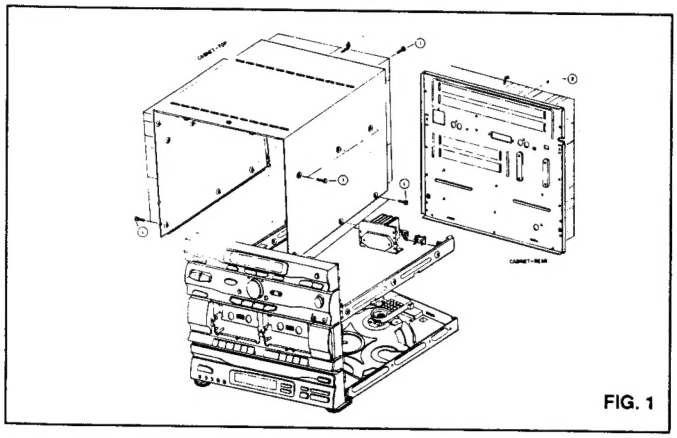


FIG. 1

2. MAIN PCB & FRONT PCB - FIG. 2 -

1) Release 7 screws (①).
2) Remove MAIN PCB.
3) Release 8 screws (②).
4) Remove KNOB (direction A,B).
5) Remove FRONT PCB.

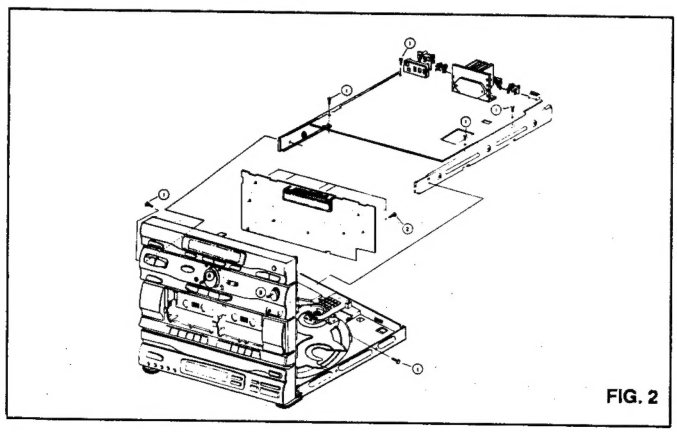


FIG. 2

3. CASSETTE DECK - FIG. 3 -

1) Press STOP/OPEN BUTTON.
2) CASSETTE DOOR OPEN.
3) Release 6 screws (①).
4) Remove CASSETTE DECK ASSEMBY.

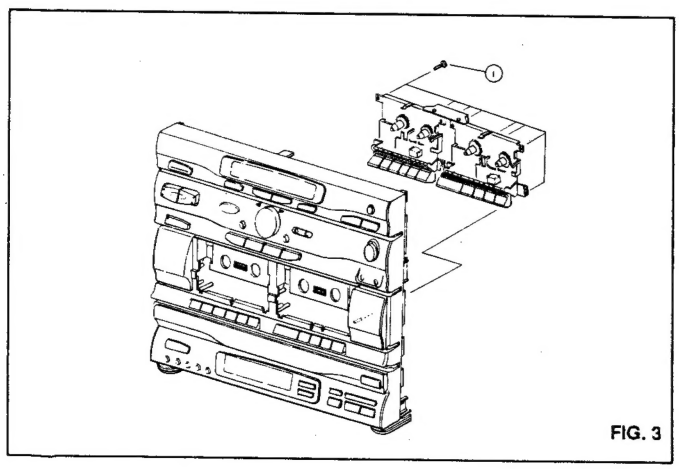


FIG. 3

4. CD - CHANGER - FIG.4 -

1) Press OPEN CHANGER.
2) Remove DOOR - CD.
3) Release 5 screws (①).
4) Remove FRONT CABINET, CHANGER.

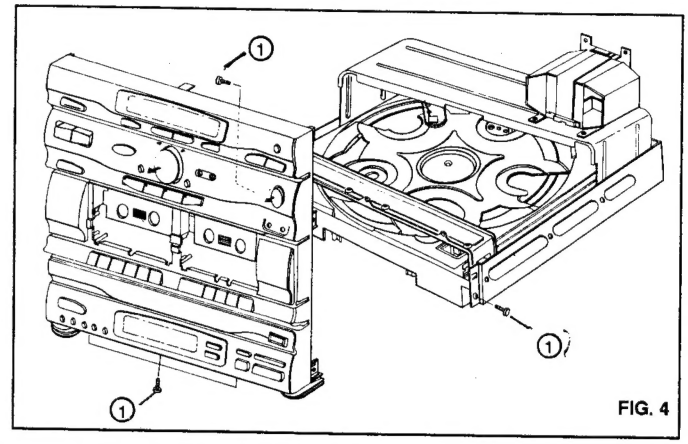


FIG. 4

5. CD-PCB & CHANGER - FIG. 5 -

1) Release 2 screws (①).
2) Remove CHASSIS - P/T.
3) Release 6 screws (②).
4) Remove CABINET - BOTTON,CD - CHANGER.

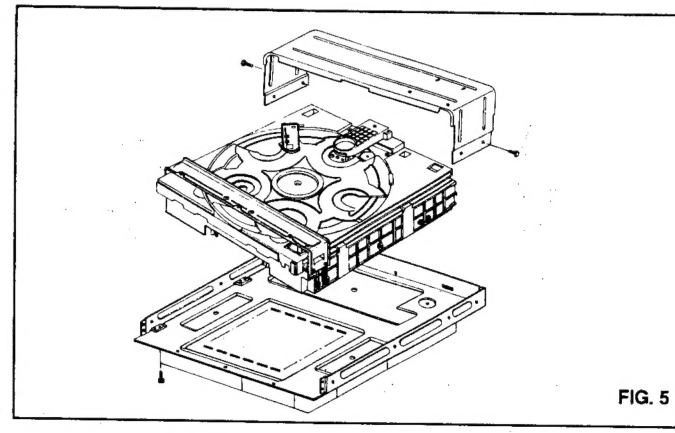


FIG. 5

6.HOW to open tray of CD changer when the power is turned off - FIG. 6 -

1) (+)Driver HOLE an BOTTOM interpose.
2) Driver (↻) a circle turn.
3) Press OPEN to close TRAY (direction B)

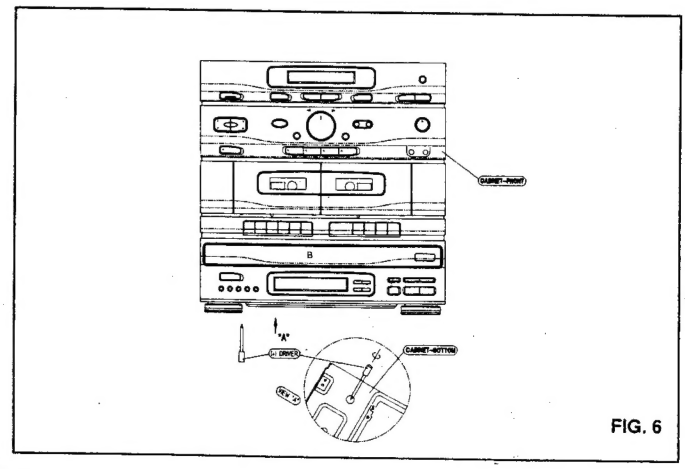


FIG. 6

■ BASIC CIRCUIT OPERATION

1. TUNER

● LC7233N-8805(μ-COM) : UIC1

* I : INPUT, O : OUTPUT

PIN No.	PIN NAME	I/O	OPERATION	ACTIVE
1	XIN	I	Crystal oscillating port.(4.5MHz)	—
2,79	TEST 1,2	I	Connect to GND	—
3	REMOCON	I	Remote control input port. If it is open, it may cause Remote Control to malfunction.	L
4	$\overline{\text{STEREO}}$	I	GND	L
5~6	K5,K4	I	DIODE MATRIX INPUT SIGNAL	H
7	CE2	O	CD REMOTE CONTROL PORT	L
8-9	$\overline{\text{FM}}$,$\overline{\text{AM}}$,$\overline{\text{LW}}$	O	Band power convert port. CD Remote control signal port.	L
10	PHONO LED	O	PHONO LED control port	H
11	VR UP	O	If volume up signals are input, it ouputs high voltage.	H
12	VR DOWN	O	If volume down signals are input, it ouputs high voltage.	H
13	MUTE	O	Not in use	
14	$\overline{\text{MO/ST}}$	O	Mono stereo selection port.	H
15~17	CE,DO,CLK	O	LC7821 control port. (serial data line)	H,H, ⌐
18	IF CNT	O	IF signal output port. If low voltage is input to SD port (LA 1851N) during auto search, it changes from low to high.	H
19	TUNER LED	O	TUNER LED Control port.	H
20	POWER OUT	O	Power control port.	H
21	$\overline{\text{A MUTE}}$	O	Audio mute port.	L
22	TAPE LED	O	TAPE LED Control port.	H
23	CD LED	O	CD LED Control port.	H
24~30	T6-T0	O	Key scan output signal.	H
32~35	K3-K0	I	Key input signal.	H
36~63	S1-S28	I	LCD Segment drive port.	—
64,65	COM1,2	O	LCD Common drive port.	—
66	INT	I	Remote control port	
67	$\overline{\text{HOLD}}$	O	L-Back up mode.	L
68	$\overline{\text{RES}}$			
69	SD	I	Broadcast receiving port.	L
70	HCTR	I	FM IF Signal input port.	—
71	LCTR	I	AM IF Signal input port.	—
72	SNS	I	POWER ON/OFF Control.	H
74,75	FM IN,AM IN	I	Input local OSC signal.	—
77,78	EQ1,2	O	Phase comparison output signal. (pin77 : AM, 78 : FM)	
31,73	VDD			
76	Vss			
80	XOUT	O	Crystal oscillating port. (4.5MHz)	—

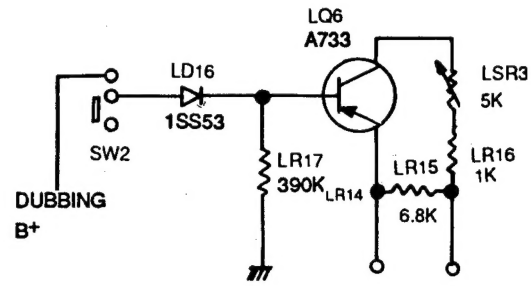
2. TAPE RECORDER

1) PLAY

When PLAY button of deck A is pressed, leaf switch is on which drives the motor through CD 1.
Deck A is operational when pin 9 of JIC1 (LA 3246) is at 0V.
When the PLAY button of deck B is pressed, the Leaf switch of deck B is on, which drives the motor through CD2.
Deck B is operational when 5~6 voltage is applied to pin 9 of JIC 1 LA 3246.
If you press both PLAY button of deck A and B simultaneously, deck B operates, first.

2) RECORD
If RECORD button of deck A is pressed, voltage is applied to the tape oscillation coil (LLI), which generates the bias supply current (105KHz) and, the current is supplied through the JC17L and JC17R to R/P head.
At this time, the current is combined with the current of the Record Amplifier Output incorporated in the JIC1 (TA8135 pin7, 16) then supplied to the R/P HEAD which records signal.
At this moment, PLAY Equalizer of deck A, B is set to deck B (pin1,2,19,20 of JIC1)

3) MOTOR SPEED
In normal speed, the speed is determined by the value which LR15 is combined with LSR3 + LR16 (LQ6 base : high)
Therefore, the motor speed is in proportion to the resistor value. High speed dubbing operates only when recording in deck A and playing in deck B.
When SW2 is on, B+ voltage which will turn LQ6 off is supplied to base of LQ6. Then motor rotates at high speed.
High rotational speed is determined by voltage at LQ6.



3. CD PLAYER

1) KS5990 KS5990B(Digital Signal Processor) : WIC 03

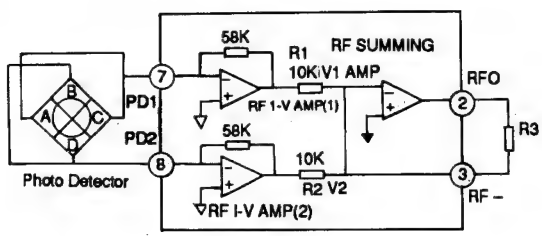
* I/O : INPUT/OUTPUT

Pin No.	Symbol	I/O	Description
1	SMEF	O	Pin 1 output is switched constant when output filter of the spindle motor is energized.
2	SMON	O	ON/OFF control for spindle motor.
3	SMPD	O	Spindle motor drive. Provides rough control during CLV-S mode and phase control during CLV-P mode.
4	SMSD	O	Spindle motor drive. Controls speed during CLV-P mode.
5	EFMZ	I	EFM signal from RF amplifier.
6	EFMO	O	Controls slice level of the EFM signal.
7	LOCK	O	The output of pin 7 reflects the status of the GFS signal which is sampled at PBFR/16. When the GFS signals is "H", but, when the signal has remained "L" for at least 8 samples, the output of pin 7 is "L".
8	VCOO	O	VCO output. The frequency is f = 8.6436MHz, when locked by the DBFR signal.
9	VCOI	I	VCO input.
10	TEST	I	(0V).
11	PHAS	O	The output of Pin11 provides phase comparison of EFM signal and VCO/2.
12	Vss	—	GND (0V).
13	MCK	I	Pin 13 provides serial transmission clock from the CPU. Data is latched on the leading edge of the clock.
14	MLT	I	Pin 14 provides latch input from the CPU. 8-bit shift register data (serial data received from the CPU) is latched in each of the registers.
15	MDAT	I	Serial data from the CPU.
16	XRST	I	System reset ("L").
17	TRCK	I	Tracking pulse input.
18	ISTAT	O	Output reflecting internal condition as designated by address.
19	MUTE	I	Muting input. MUTE is "L" when ATTM of internal register A is "L" (normal condition). MUTE is "H" when muting condition is set.
20	SQOK	O	Output the results CRC check of subcode Q.
21	SBCK	I	Clock input for subcode serial output.
22	SDAT	O	Serial output of subcode.
23	SQDT	O	Output of subcode Q.
24	S0S1	O	Output of subcode sync S0 + S1.
25	SQCK	I/O	Clock for reading subcode Q.
26	SQEN	I	Input for selecting SQCK (L; SQCK is output, H; SQCK is input)

Pin No.	Symbol	I/O	Description
27	SRAM	I	SRAM is "H" in Normal, SRAM is "L" when system is testing.
28	LKFS	O	Display output for frame sync lock status.
29	DB8	I/O	Data pin for external RAM. DATA8 (MSB) in test mode. Hi-Z in normal
30	DB7	I/O	Data pin for external RAM. DATA7 in test mode. Hi-Z in normal
31	DB6	I/O	Data pin for external RAM. DATA6 in test mode. Hi-Z in normal
32	DB5	I/O	Data pin for external RAM. DATA5 in test mode. Hi-Z in normal
33	V_{DD}	—	Power supply (+ 5V).
34	DB4	I/O	Data pin for external RAM. DATA4 in test mode. Hi-Z in normal
35	DB3	I/O	Data pin for external RAM. DATA3 in test mode. Hi-Z in normal
36	DB2	I/O	Data pin for external RAM. DATA2 in test mode. Hi-Z in normal
37	DB1	I/O	Data pin for external RAM. DATA1 (LSB) in test mode. Hi-Z in normal
38	AD01	O	(LSB)
39	AD02	O	In normal mode (TEST = 'L', SRAM = 'H'), these pins are High impedance (Hi-Z) In test mode (TEST = 'H', SRAM = 'L'), these pins are Output address of external RAM
40	AD03	O	
41	AD04	O	
42	AD05	O	
43	AD06	O	
44	AD07	O	
45	AD08	O	
46	AD09	O	
47	AD10	O	
48	AD11	O	(MSB)
49	WE	I/O	In normal mode, this is WE output. In test mode, write enable input.
50	CE	I/O	In normal mode, this is CE output. In test mode, chip enable input.
51	4MCK	O	Divider output for crystal. f = 4.2336MHz
52	Vss	—	GND (0V)
53	XIN	I	Input to crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
54	XOUT	O	Output from crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
55	SEL1	I	Mode selection input 1.
56	SEL2	I	Mode selection input 2.
57	SEL3	I	Mode selection input 3.
58	SEL4	I	Mode selection input 4. Code switch input for audio data output. 2's complement output when "L", offset binary output when "H".
59	SEL5	I	Mode selection input 5. Code switch input for audio data output. Serial output when "L", parallel output when "H".
60	APTR	O	Output for aperture compensation. "H" when R-ch.
61	APTL	O	Output for aperture compensation. "H" when L-ch.
62	C1F1	O	Monitor output reporting status of error correction for C1 decoder. When SEL5 = 'L', DA01 (LSB of parallel audio data) is output when SEL5 = 'H'.
63	C1F2	O	Monitor output reporting status of error correction for C1 decoder when SEL5 = 'L', DA02 is output when SEL5 = 'H'.

Pin No.	Symbol	I/O	Description
64	C2F1	O	Monitor output reporting status of error correction for C2 decoder when SEL5 = 'L', DA03 is output when SEL5 = 'H'.
65	C2F2	O	Monitor output reporting status of error correction for C2 decoder when SEL5 = 'L', DA04 is output when SEL5 = 'H'.
66	C2FL	O	When SEL5 = 'L', output of status condition. C2FL is set 'H' when the C2 sequence. Presently being corrected becomes impossible to correct. DA05 is output when SEL5 = 'H'.
67	C2PO	O	Display output of the C2 pointer when SEL5 = 'L', DA06 is output when SEL5 = 'H'.
68	XTFR	O	When SEL5 = 'L', output of read frame clockwhich is 7.35KHz of the crystal system. DA07 is output when SEL5 = 'H'.
69	PBFR	O	When SEL5 = 'L', output of write frame clock which is 7.35KHz when locked by the crystal system. DA08 is output when SEL5 = 'H'.
70	$\overline{PBCK}$	O	When SEL5 = 'L', output of VCO/2 (f = 4.3218MHz when locked by the EFM signal). DA09 is output when SEL5 = 'H'.
71	FSDW	O	When SEL5 = 'L', output for unprotected frame sync patterns. DA10 is output when SEL5 = 'H'.
72	ULKFS	O	Output for display of status of frame sync protection when SEL5 = 'L', DA11 is output when SEL5 = 'H'.
73	V_{DD}	—	Power supply (+ 5V).
74	$\overline{JIT}$	O	When SEL5 = 'L', output for display of either RAM overflow or underflow for +4 frame jitter absorption. DA12 is output when SEL5 = 'H'.
75	ZWDCK	O	When SEL5= 'L', output for strobe signal (352.8KHz when DF is ON, 176.4KHz when DF is OFF). DA13 is output when SEL5 = 'H'.
76	$\overline{BLCK}$	O	When SEL5 = 'L', inverse output of BLCK. DA14 is output when SEL5 = 'H'.
77	BLCK	O	When SEL5 = 'L', bit clock output (4.2336MHz when DF is ON, 2.1168MHz when DF is OFF) DA15 is output when SEL5 = 'H'.
78	DATA	O	Serial data output of audio signal when SEL5 = 'L'. DA16 is output when SEL5 = 'H'.
79	WDCK	O	Strobe signal output. Output is 176.4KHz when DF is on. Output is 88.2KHz when DF is off.
80	CHCK	O	Strobe signal output. Output is 88.2KHz when DF is on. Output is 44.1KHz when DF is off.

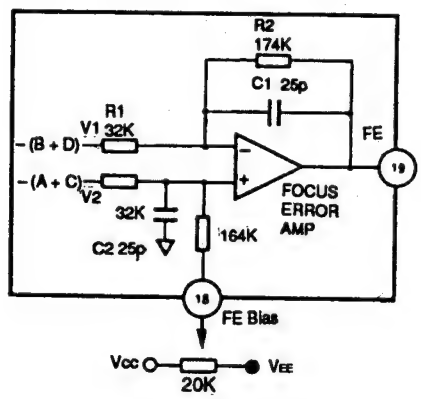
(2) RF AMPLIFIER (KA9201) : WIC-01



RF I-V AMP(1) and RF I-V AMP(2) are converted into voltage from current signal of PD1 (A + C) and PD2 (B + D) through the 58Kohm internal resistor. Furthermore, it is added in RF summing amplifier, this signal (A + B + C + D) is output at RFO (pin 2). The RF output voltage (low frequency) is as follow.

VRF = – R3* (iPD1 + iPD2)
= – R3* (V1/R1 + V2/R2)
= – R3* (V1/10K + V2/10K)

(3) FOCUS ERROR AMPLIFIER (KA9201) : WIC 01



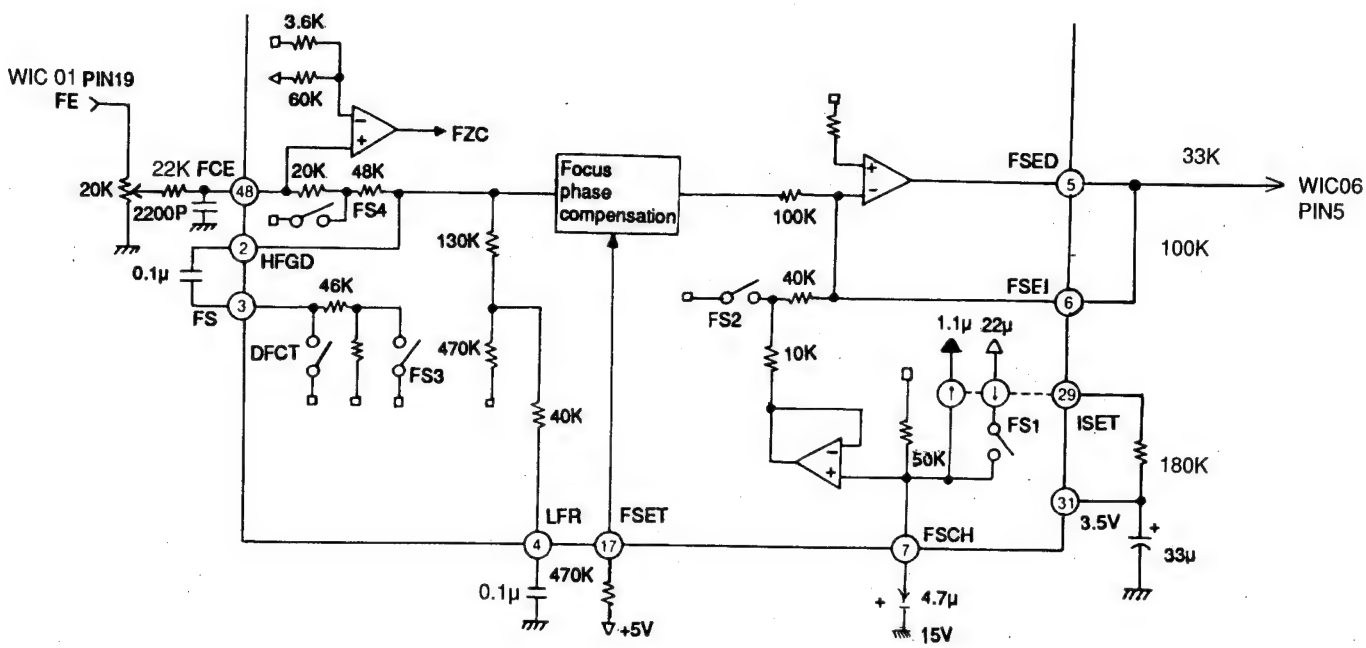
The Focus Error AMP is the difference between RF I-V AMP (1) output (A + C) and RF I-V AMP(2) output (B + D). This two [– (A + C), –(B + D)] signals are each applied to the (–) and (+) input of Focus Error AMP.
As thelaf result of differential voltage, Focus Error signal is appeared at FE pin (pin 19).
This FE output voltage (low frequency) become [(A + C) – (B + D)], as follow.

V_{FE} = R2/R1 x (V2–V1)
= 5.4 (V2 – V1)

The focus error voltage is directed to the focus servo circuit, to maintain optimum focusing at all times.

(4) FOCUS SERVO (KA830 9B) : WIC 02

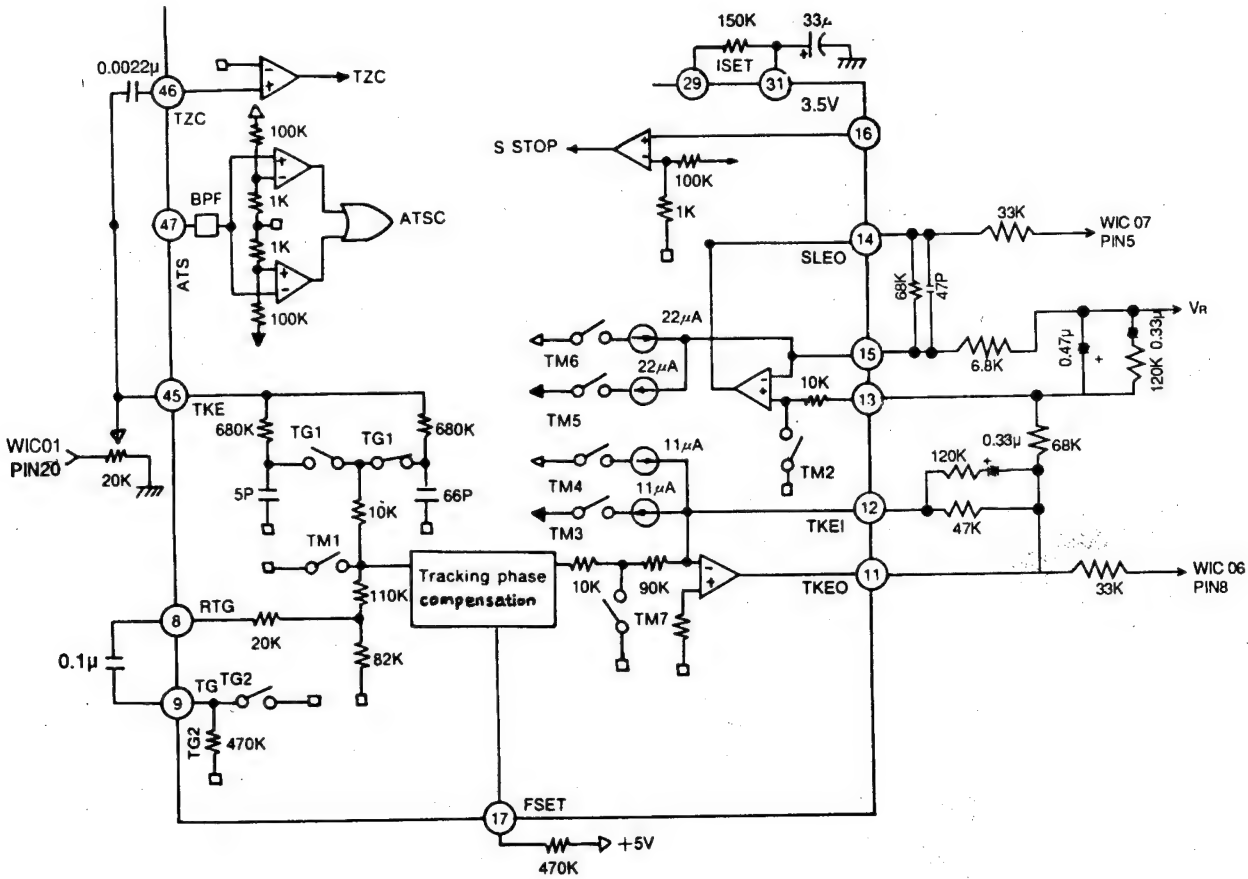
The below is a block diagram of the focus servo system.
When FS3 is switched on, the high frequency gain can be reduced by forming a low frequency time constant through a capacitor connected across pins 2 and 3 and the internal resistor.
The capacitor across the pin 4 and GND has a time constant to raise the low frequency usually playback condition.
The peak frequency of the focus phase compensation is inversely proportional to the resistor connected to pin 17 (about 1. 2KHz when the resistor is 470 k Ω).



The focus search peak becomes about ± 1.1 Vp-p with above constant. The peak is inversely proportional to the resistor connected across the pins 29 and 31. However, when this resistor is varied, the peaks of track jump and sled kick also vary.
The FZC comparator invert input is set to 5.7% of the difference between the reference voltage Vcc and Vc (Pin 1) : 5.7% x (Vcc – Vc).

(5) TRACKING SLED SERVO SYSTEM (KA8309B) : WIC 02

The below is a block diagram of the tracking sled servo system.
The capacitor across pins 8 and 9 has a time constant to lower the high frequency when TG2 is switched off. The tracking phase compensation peak frequency is inversely proportional to the resistor connected to pin 17 (about 1.2KHz when the resistor is 470KΩ).
For a tracking jump in the FWD or REV direction, TM3 or TM4 are set to ON. At this time, the peak voltage fed to the tracking coil is determined by the TM3 and TM4 current values and the feedback resistor from pin 12. That is:
Track jump peak voltage = TM3 (TM4) current value x feedback resistor value

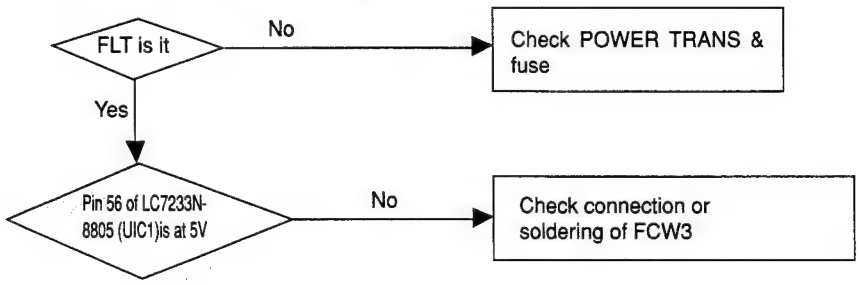


The FWD or REV sled kick is done by setting TM5 or TM6 ON. At this time, the peak voltage added to the sled motor is determined by the TM5 or TM6 current value and the feedback resistor from pin 15.
Sled jump peak voltage = TM5 (TM6) current value x feedback resistor value
Each SW current value is determined by the resistor connected to pins 29 and 31.
When the resistor is at about 150KΩ ,
TM3 or TM4 is + 11 μA and TM5 or TM6 is + 22 μA.
This current value is almost inversely proportional to the resistor, variable within a range of about 5 to 40 μA for TM3.
STOP is the ON/OFF detection signal for the limit SW or the sled motor's innermost circumference.

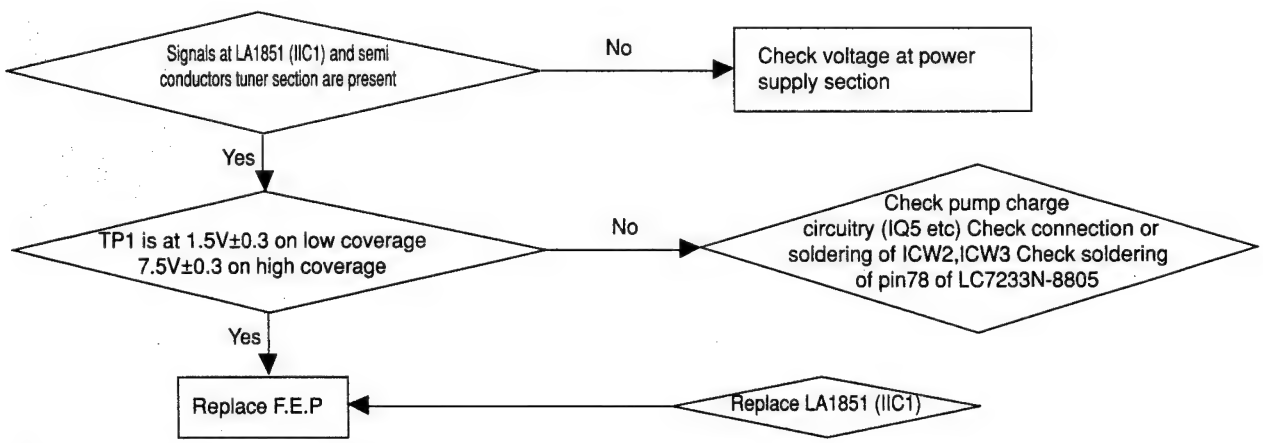
■ TROUBLE SHOOTING

1. MAIN UNIT

1) POWER ON/OFF PROBLEM

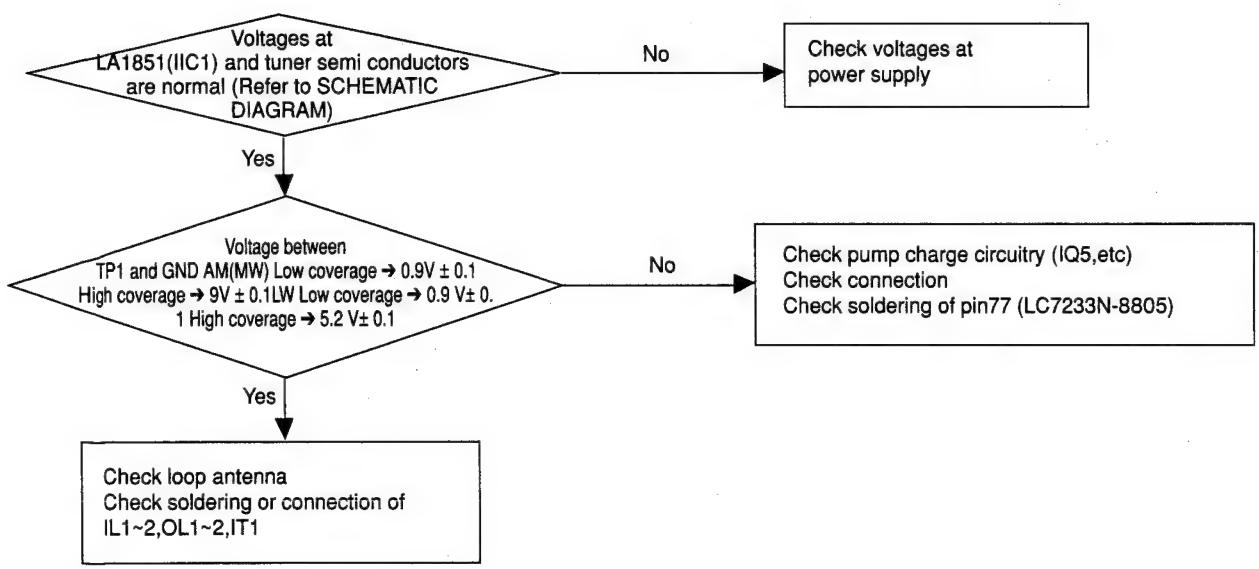


2) FM NO SOUND

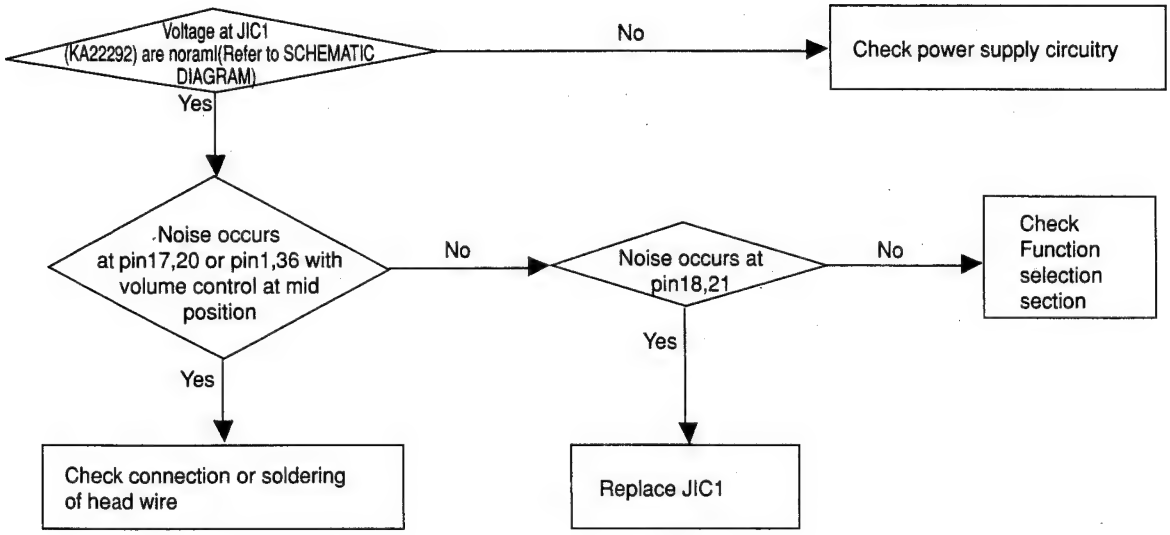


* F.E.P:FRONT END PACK

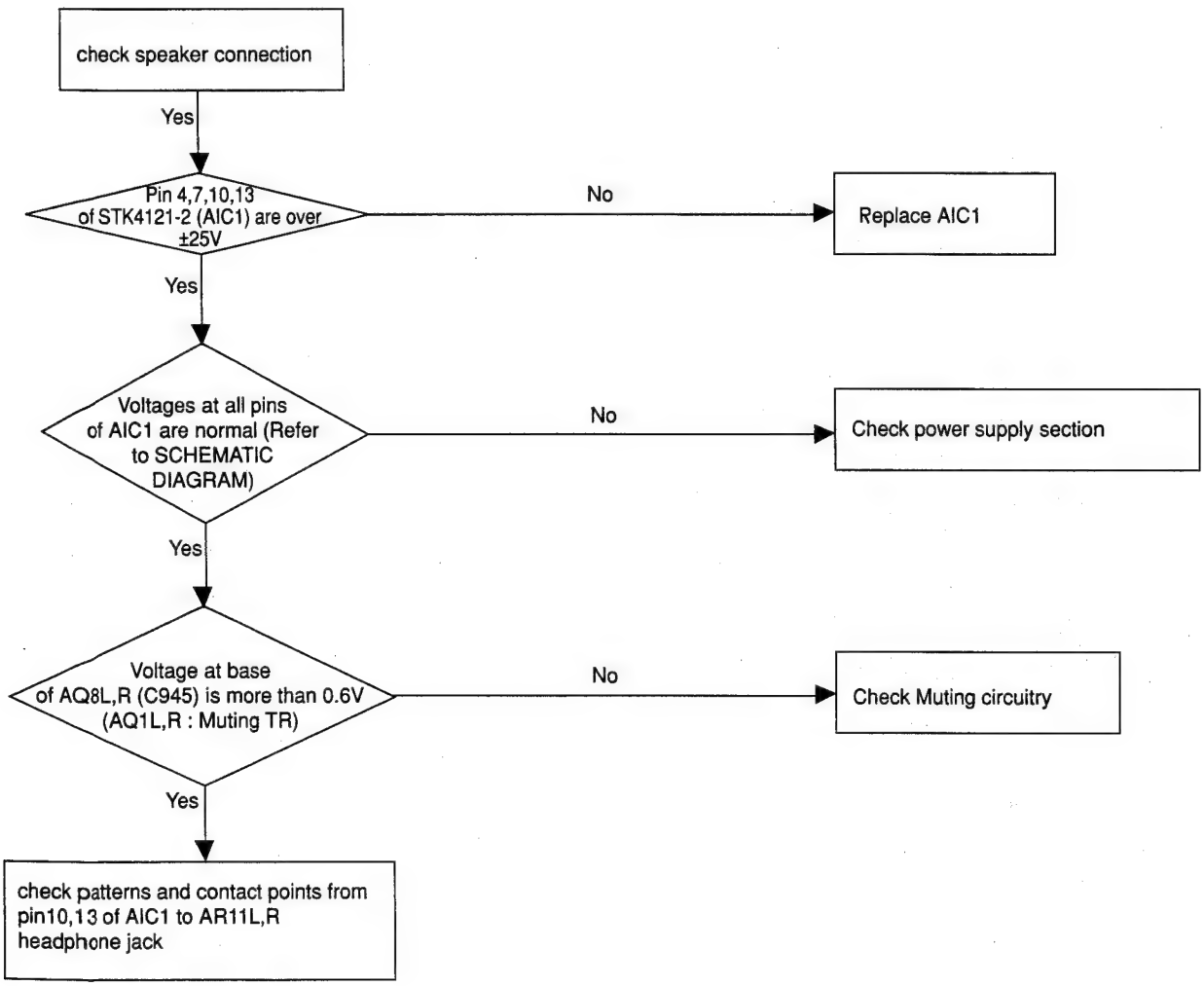
3) AM NO SOUND



4) TAPE NOT PLAYING



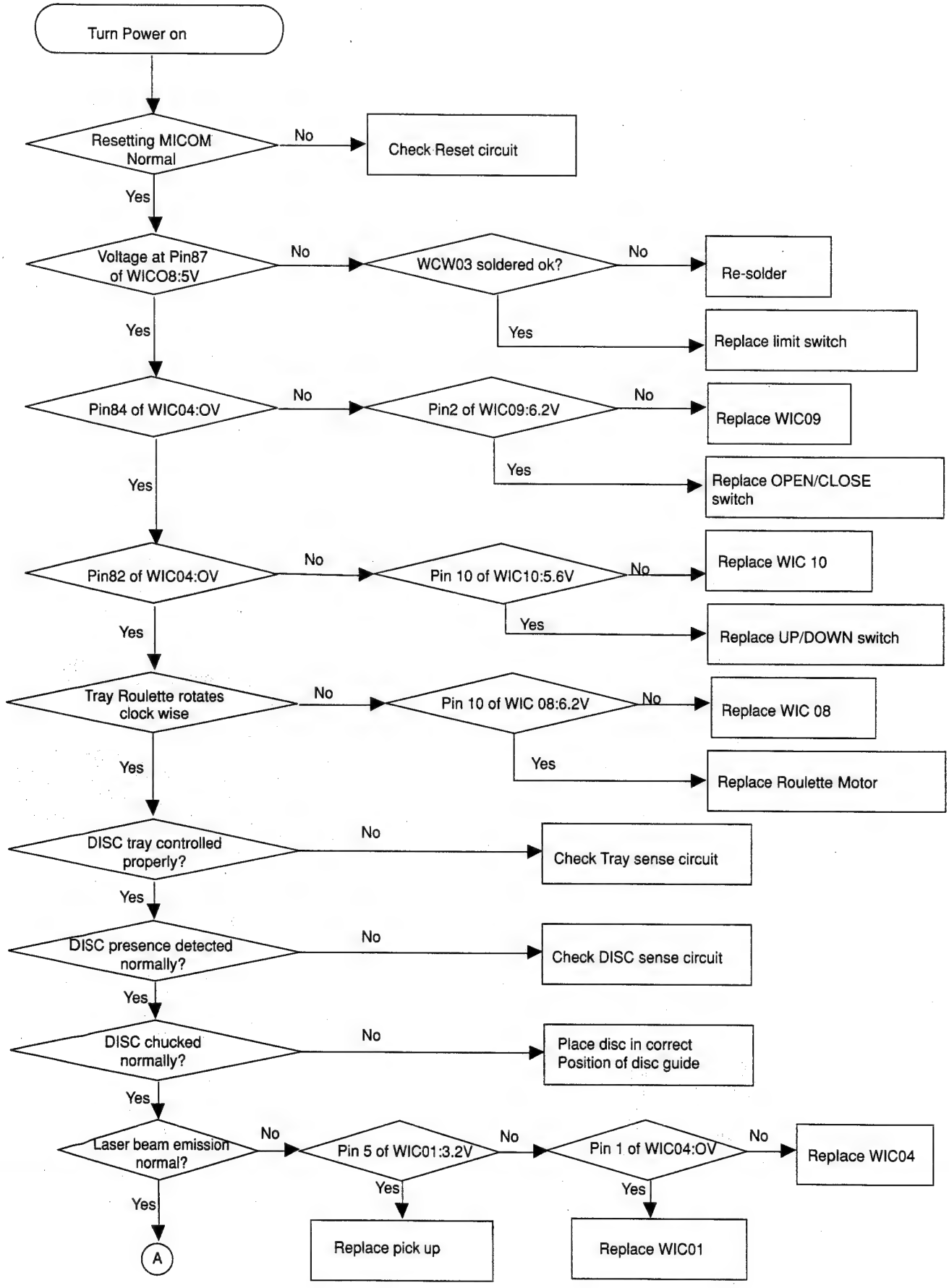
5) AUDIO OUTPUT PROBLEM

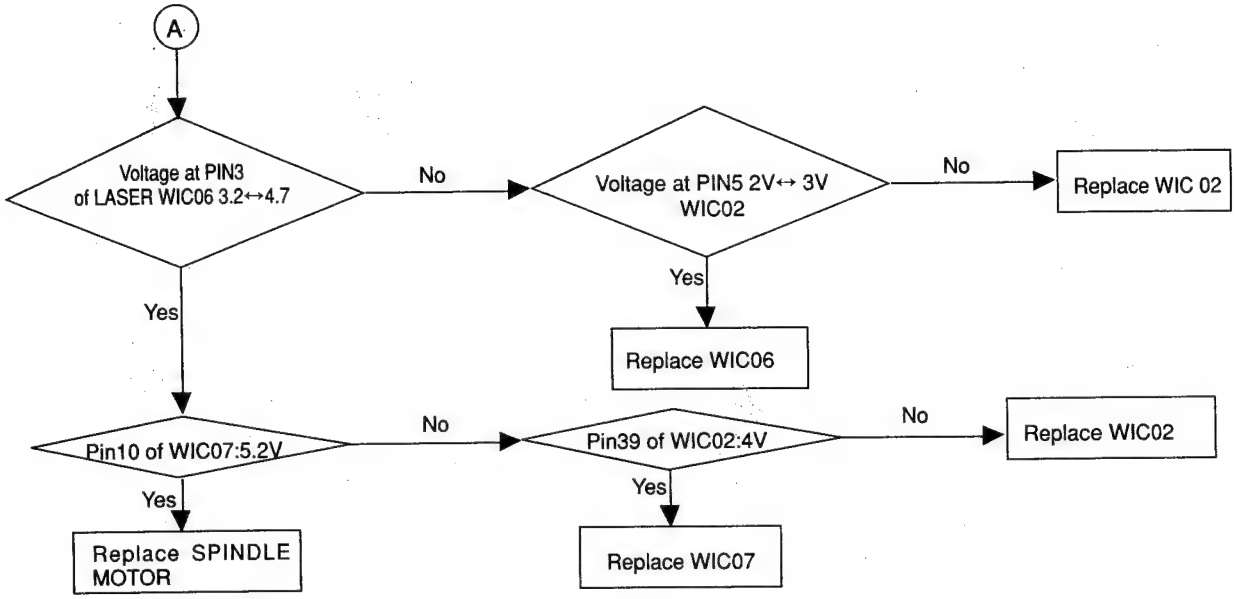


2.CD PLAYER

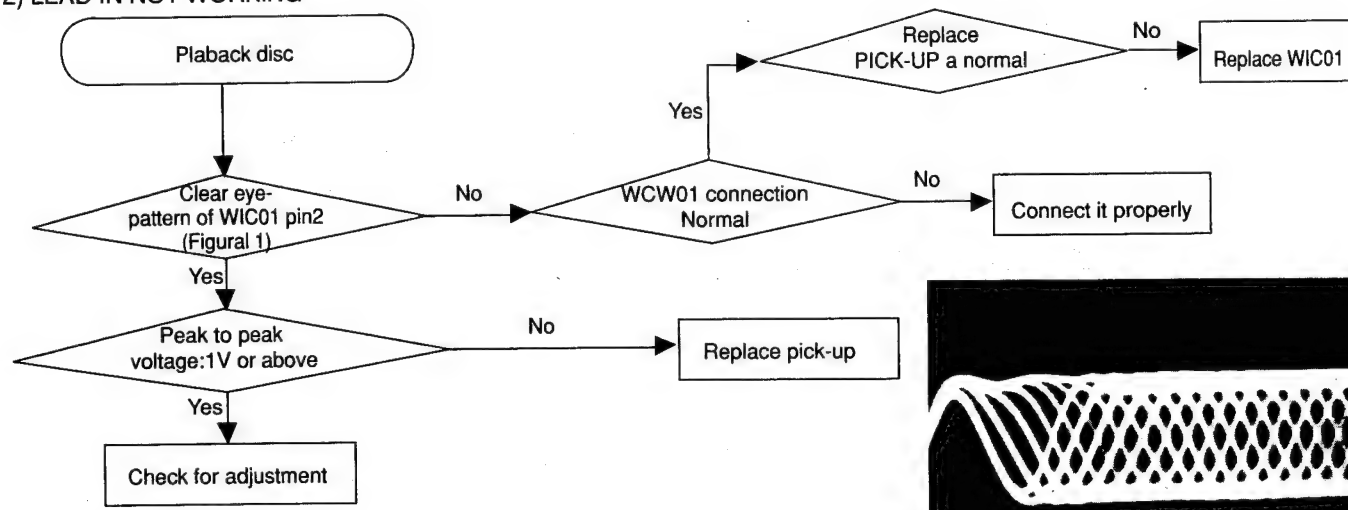
* Be sure not to use a warped or dirty disc in troubleshooting.

1) DISC DOESN'T ROTATE





2) LEAD IN NOT WORKING



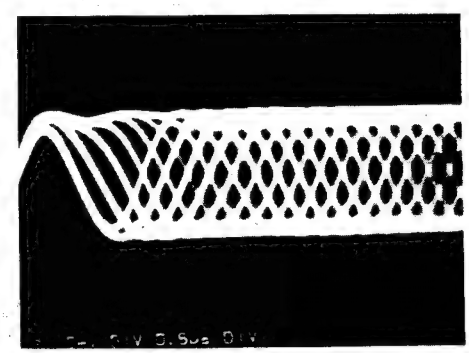


FIG.1

3) NO AUDIO

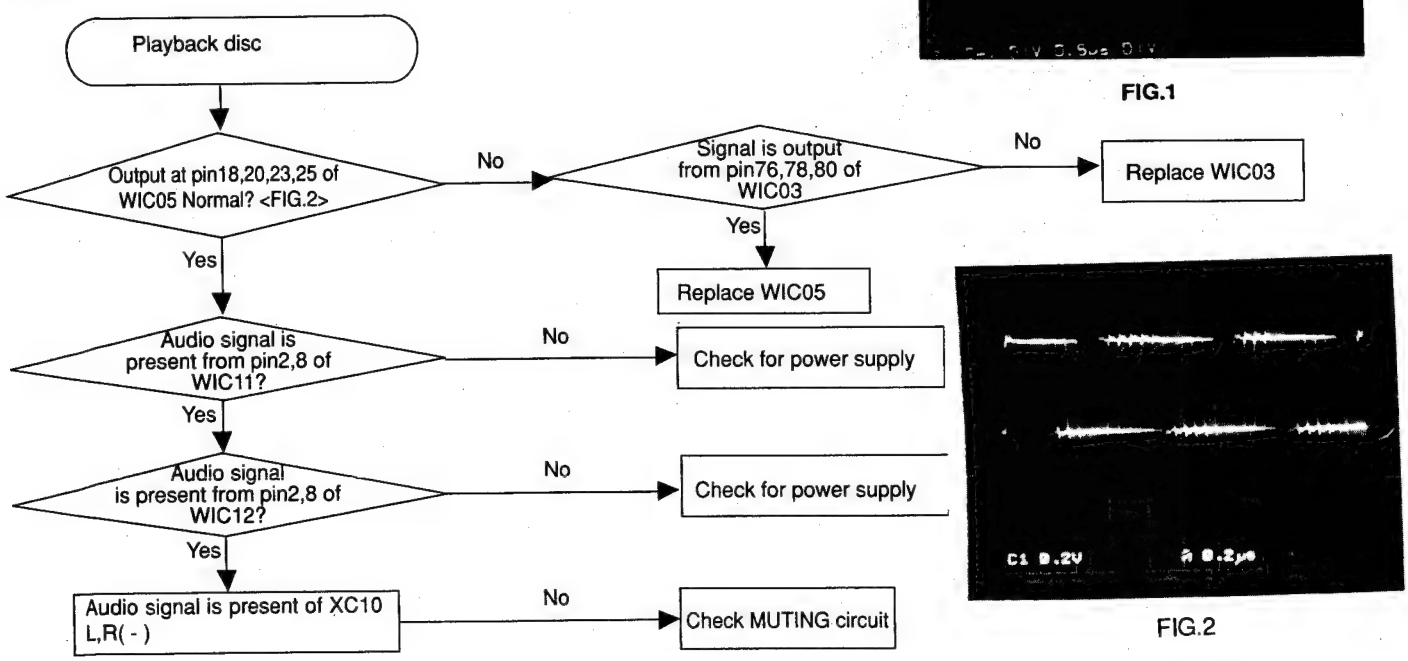


FIG.2

■ ADJUSTMENT

Adjustments to this unit have already been made during production procedure.
Therefore, no adjustment is needed. If readjustment is reguired, follow the adjustment procedure given.

1. TUNER

1) MEASURING INSTRUMENTS REQUIRED

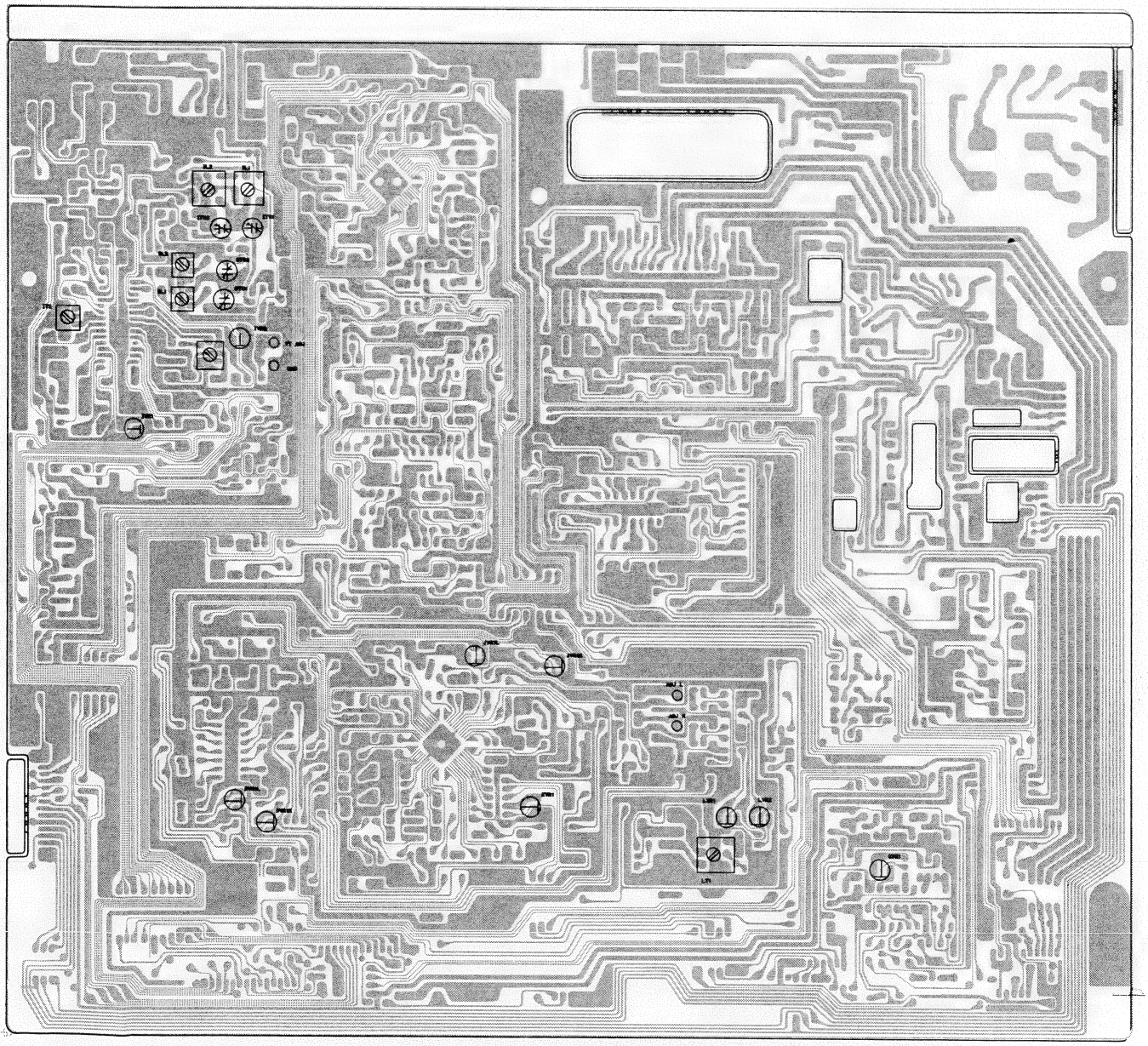
(1) AM standard signal generator (S.S.G)
: 400Hz, 30% MOD.
(2) FM standard signal generator
: output impedance 75 Ω
1KHz, 40KHz DEV.
(3) Oscilloscope
(4) VTVM (5) Frequency counter
(6) Loop antenna
(7) Dummy (75 Ω)
(8) DC voltmeter

2) IMPORTANT

(1) Check the power source voltage.
(2) Set function and band switches to a band to be aligned.
(3) The equalizer, volume and balance control should be trned to the mid position.

3) LOCATION OF ADJUSTMENT POINTS (PARTS SIDE)

MAIN PCB



4). ADJUSTMENT PROCEDURE

(1) FM ADJUSTMENT

STEP	ITEM	CONNECTION	SSG FREQ.	FREQ. SETTING	ADJUSTMENT POINT	RESULT & REMARK
1	IF CENTER & T.H.D adjustment.	FIG. 1	98MHz	98MHz	IT 2	Minimum distortion
2	Auto search level adjustment	FIG. 2	98MHz	98MHz	IVR 2	STEREO LED ON
3	FM stereo separation adjustment	FIG. 3	98MHz	98MHz	IVR 1	If L-CH is input, R-CH should be minimum and visa-versa.

* High coverage and tracking adjustment are not required.

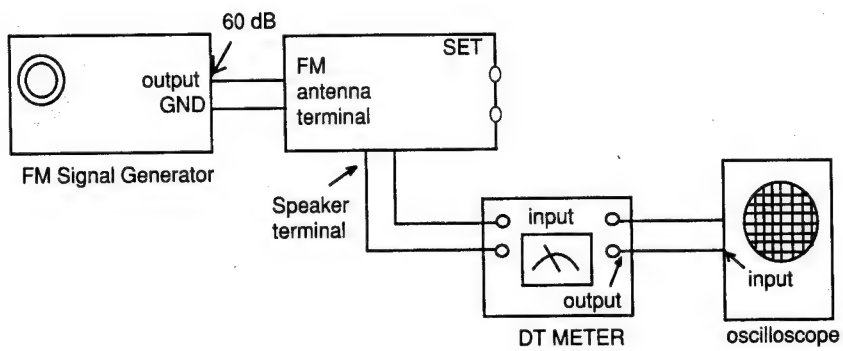


FIG. 1) IF CENTER AND T.H.D adjustment

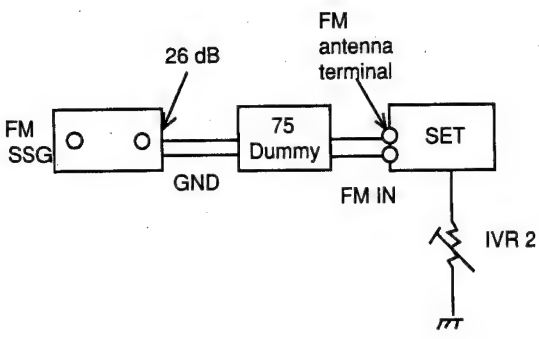


FIG. 2) AUTO SEARCH LEVEL adjustment

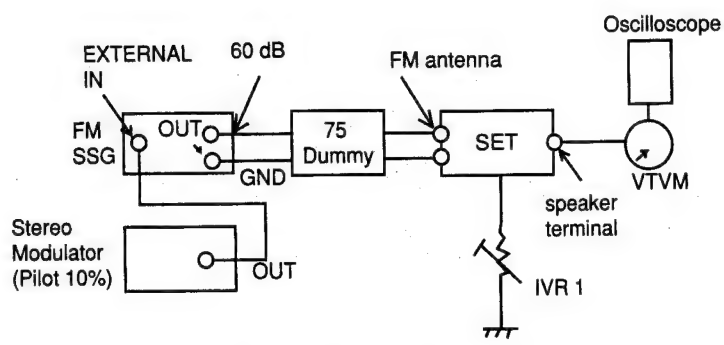


FIG. 3) FM STEREO SEPARATION adjustment

(2) AM ADJUSTMENT

① 2 BAND (FM/AM)

STEP	ITEM	CONNECTION	SSG FREQ.	FREQ.SETTING	ADJUSTMENT POINT	RESULT & REMARK
1	Intermidiate frequency (IF) adjustment	FIG. 4	522KHz	522KHz	IT1	Maximum output
2	AM frequency coverage adjustment	Connect DC voltmeter to TP1 and GND	—	522KHz	OL1	0.9V
3			—	1404KHz	OCT1	9V
4	Repeat step 2 and 3 several times.					
5	AM tracking adjustment	FIG. 4	594KHz	594KHz	IL1	Maximum output
6			1404KHz	1404KHz	ITC1	Maximum output
7	Repeat step 5 and 6 several times.					

② 3 BAND (FM/MW/LW) * MW band : Refer to 2 band section. (MW → AM)

STEP	ITEM	CONNECTION	SSG FREQ.	FREQ.SETTING	ADJUSTMENT POINT	RESULT & REMARK
1	LW frequency coverage adjustment	FIG. 4		146KHz	OL2	0.9V
2				290KHz	OTC2	5.2V
3	Repeat step 1 and 2					
4	LW tracking adjustment	FIG. 4	155KHz	155KHz	IL2	Maximum output
5			270KHz	170KHz	ITC2	Maximum output
6	Repeat step 5 and 6 several times.					

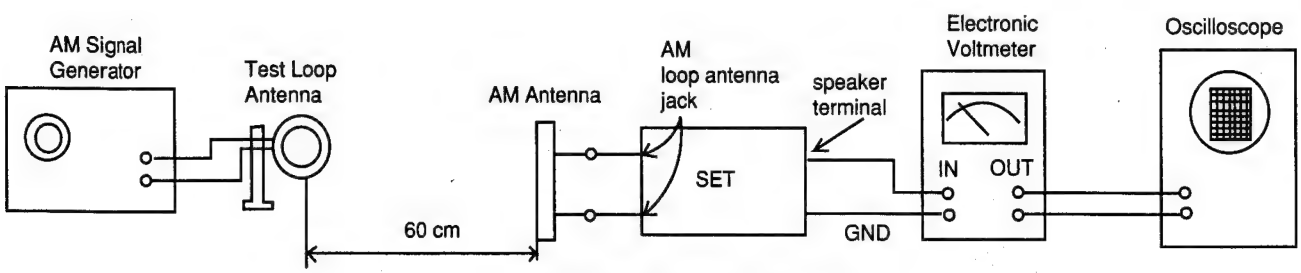


FIG. 4) AM TRACING adjustment

2. CD PLAYER

1. MEASURING INSTRUMENT

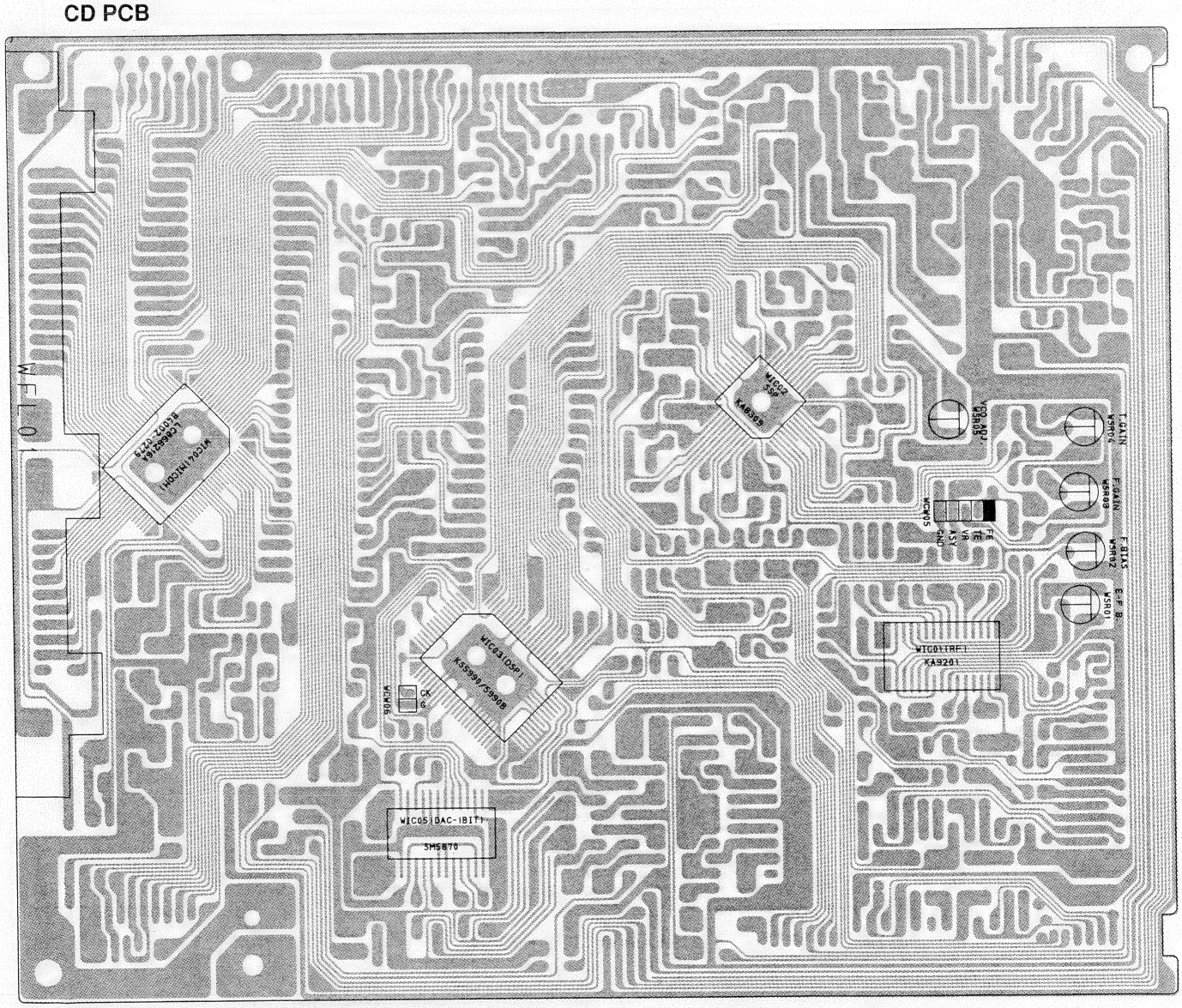
1) Oscilloscope (100MHz ≧ Frequency)
2) Probe (10 : 1)
3) Frequency counter

2. IMPORTANT

1) Semi-Volume position can be a little different depending on the model.
2) Be sure not to use a warped or dirty disc in adjusting.
3) When adjusting Semi-Volume, use plastic screw driver.

3. LOCATION OF ADJUSTMENT (PARTS SIDE)

CD PCB



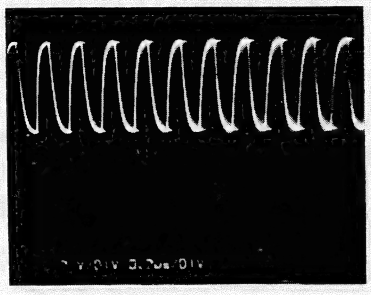
WSR01 ; E-F Balance adjustment
WSR02 ; Focus bias adjustment
WSR03 ; Focus gain adjustment
WSR04 ; Tracking gain adjustment
WSR05 ; VCO adjustment
WCW05 ; WCW06 ; Adjustment point

4. ADJUSTMENT PROCEDURE

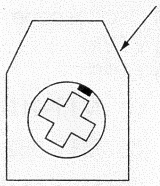
1) CLV ADJUSTMENT

(1) Turn power on and load a disc.
(2) Frequency counter connection.
(+) terminal ; CLK
(-) terminal ; G
(3) Connect ASY to GND
(4) Adjust WSR05 so the frequency counter reads 4.37MHz. (Adjust in stop mode)
(5) Disconnect ASY from GND

CLV



ADJ. POINT

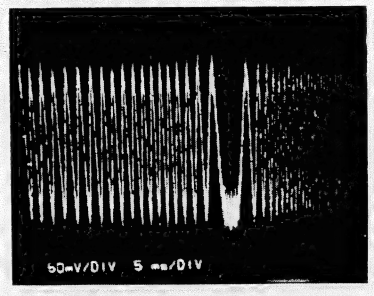


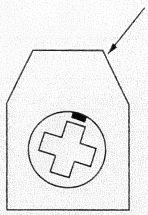
WSR05

2) E-F BALANCE ADJUSTMENT

(1) Turn power on and load a disc.
(2) Press play button.
(3) Oscilloscope setting and connection
{ VOLT/DIV ; 50mV / TIME/DIV ; 5mS } { (+) terminal ; TE / (-) terminal ; VR }
(4) Adjust WSR04 fully counter clockwise.
(5) Adjust WSR01 so the waveform is as shown in the picture.
(6) Set WSR04 back to the place it was before adjustment.

E-F BALANCE



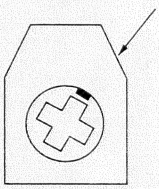


WSR01

3) TRACKING GAIN ADJUSTMENT

(1) Turn power on and load a disc.
(2) Press play button.
Oscilloscope setting and connection
(3) { VOLT/DIV ; 50mV / TIME/DIV ; 1mS } { (+) terminal ;TE / (-) terminal ; VR }
(4) Adjust WSR04 so the peak to peat waveform is as shown in the picture.

TRACKING GAIN

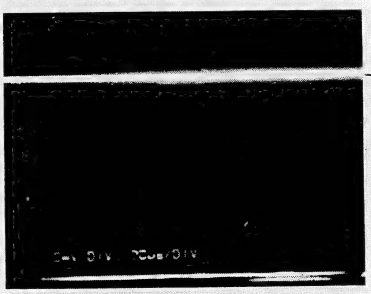


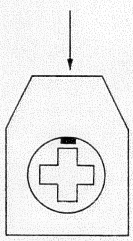
WSR04

4) FOCUS BIAS ADJUSTMENT

(1) Turn power on and load a disc.
(2) Oscilloscope setting and connection
{ VOLT/DIV ; 10mV / TIME/DIV ; 20μS } { (+) terminal ; FE / (-) terminal ; VR }
(3) Adjust WSR02 so the waveform is as shown in the picture. (Adjuste in stop mode).

FOCUS BIAS



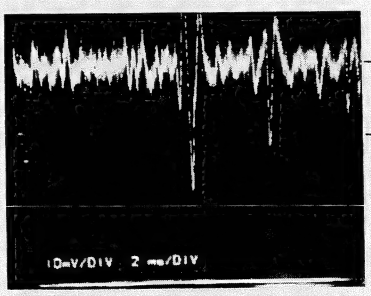


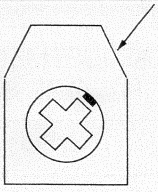
WSR02

5) FOCUS GAIN ADJUSTMENT

(1) Turn power on and load a disc.
(2) Press play button.
(3) Oscilloscope setting and connection
{ VOLT/DIV ; 10mV / TIME/DIV ; 20mS } { (+) terminal ; FE / (-) terminal ; VR }
(4) Adjust WSR03 so the peak to peak waveform is as shown in the picture.

FOCUS GAIN





WSR03

(Pictures taken in 10 : 1 probe)

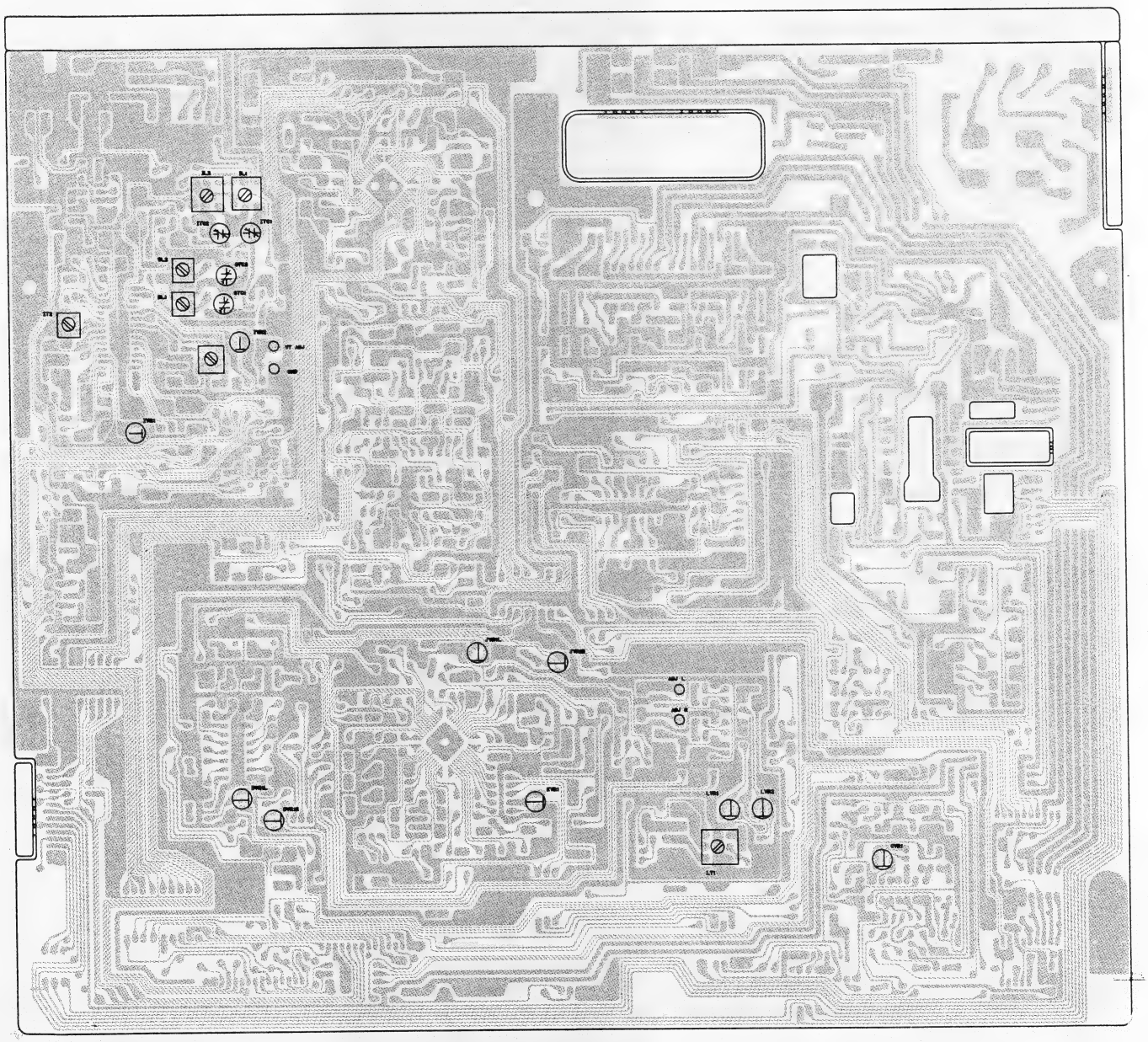
3. TAPE RECORDER

1) MEASURING INSTRUMENTS REQUIRED

(1) Oscilloscope
(2) VTVM
(3) TAPE
① MTT-111 (or equivalent) : 3KHz signal is recorded → for tape speed adjustment
② MTT-5521 (or equivalent)
③ MTT-114NA (or equivalent) : 12.5KHz signal is recorded. → for azimuth adjustment

2) LOCATION OF ADJUSTMENT POINTS (PARTS SIDE)

MAIN PCB



3) ADJUSTMENT PROCEDURE

(1) TAPE SPEED

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	Normal speed adjustment	FIG. 1	Insert MTT-111 to DECK B. Press PLAY button.	CVR 1	3KHz

(2) PLAY LEVEL

① DECK A

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	AZIMUTH	FIG. 2	Play MTT-114NA in the DECK A.	FIG. 3	Maximum output and same phase of L,R-CH Fix the screw.

② DECK B

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	AZIMUTH	FIG. 2	Play MTT-114NA in the DECK B.	FIG. 3	Maximum output and same phase of L,R-CH Fix the screw.

(3) RECORD ADJUSTMENT

STEP	ITEM	CONNECTION	PREPARATION	ADJUSTMENT POINT	RESULT & REMARK
1	Bias oscillation frequency adjustment	FIG. 4 (ADJL, LCH ADJ R, RCH, TPG;GND)	Record MTT-5511 in the DECK A	LT 1	105KHz
2	Bias current adjustment	FIG. 4 (ADJL, LCH ADJ R, RCH, TPG;GND)	Record MTT-5511 in the DECK A	LVR1, LVR2	42 mV
3	Signal current adjustment	FIG. 4 (ADJL, LCH ADJ R, RCH, TPG;GND)	Record MTT-5511 in the DECK A (Apply 1KHz 5mV sine wave to PHONO INPUT)	DVR1L, DVR1R	4.9mV Disconnect CN20
4	REC EQ CONTROL adjustment	FIG. 4 (ADJL, LCH ADJ R, RCH, TPG;GND)	Record MTT-5511 in the DECK A (Apply 12.5KHz 5mV sine wave to PHONO INPUT)	KVR1	Maximum

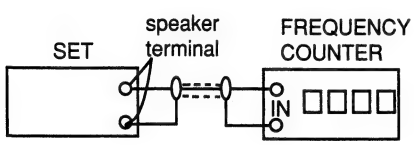


FIG.1

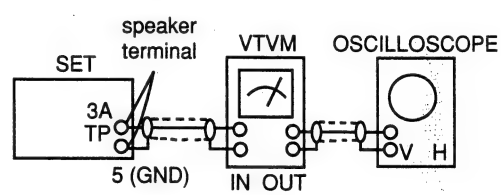


FIG.2

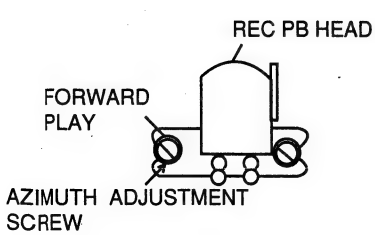


FIG.3

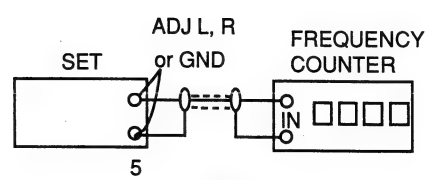
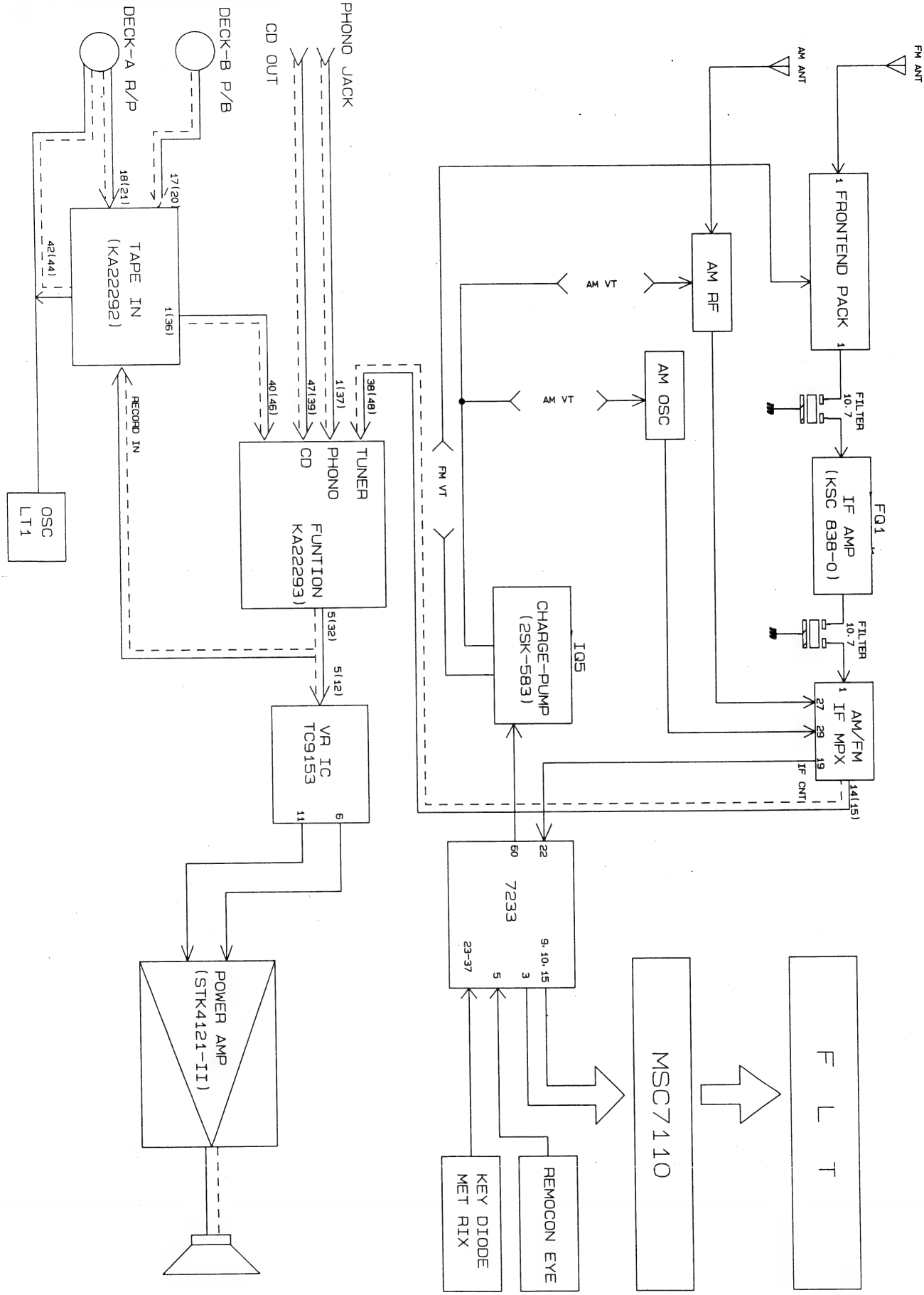


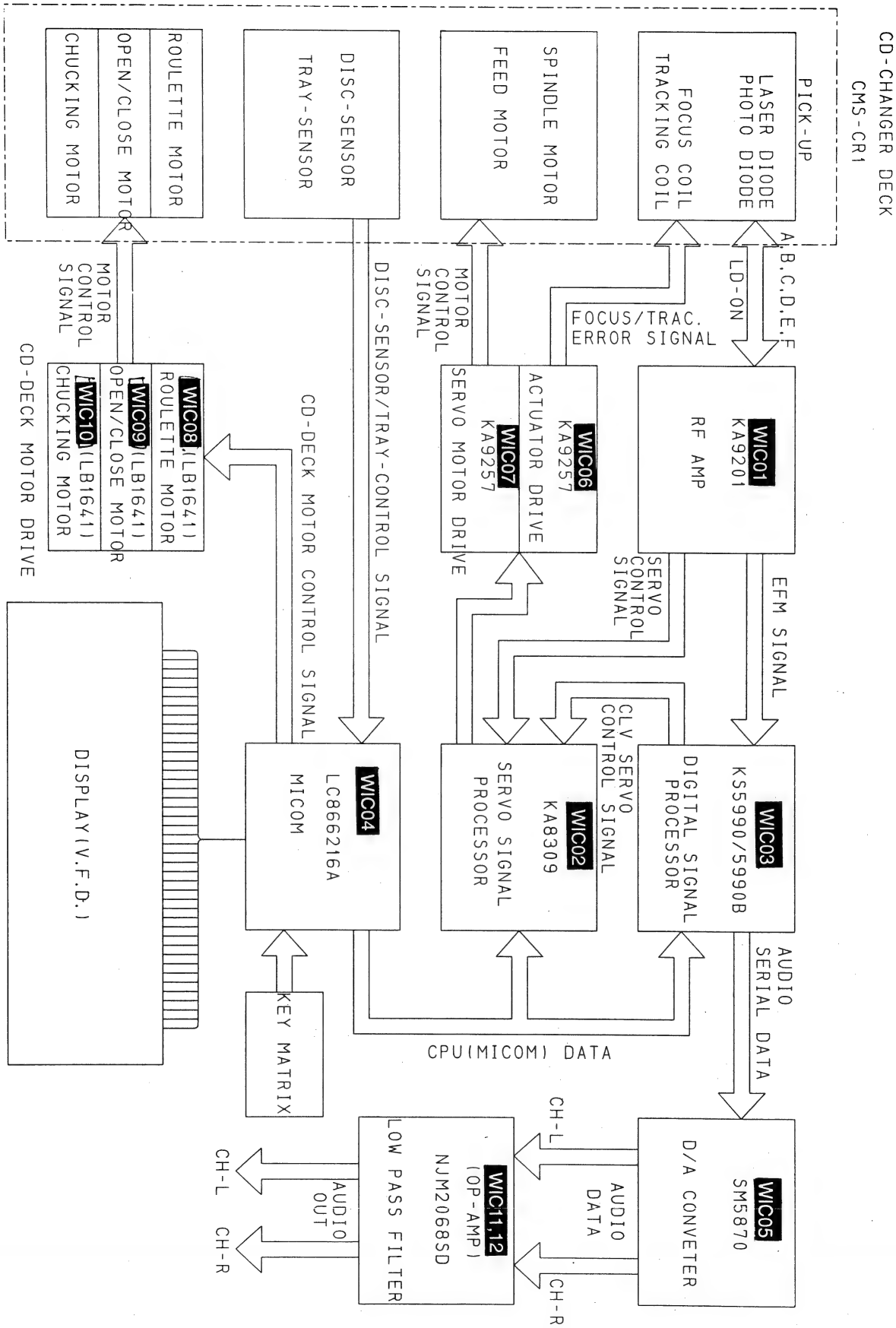
FIG.4

■ BLOCK DIAGRAM

1. MAIN SECTION



2. CD PLAYER


CD-CHANGER DECK
CMS-CR1
PICK-UP
LASER DIODE
PHOTO DIODE
FOCUS COIL
TRACKING COIL
SPINDLE MOTOR
FEED MOTOR
DISC-SENSOR
TRAY-SENSOR
ROULETTE MOTOR
OPEN/CLOSE MOTOR
CHUCKING MOTOR
A,B,C,D,E,F
LD-ON
FOCUS/TRAC. ERROR SIGNAL
MOTOR CONTROL SIGNAL
DISC-SENSOR/TRAY-CONTROL SIGNAL
MOTOR CONTROL SIGNAL
CD-DECK MOTOR DRIVE
WIC01 KA9201 RF AMP
WIC06 KA9257 ACTUATOR DRIVE
WIC07 KA9257 SERVO MOTOR DRIVE
WIC08 (LB1641) ROULETTE MOTOR
WIC09 (LB1641) OPEN/CLOSE MOTOR
WIC10 (LB1641) CHUCKING MOTOR
SERVO CONTROL SIGNAL
EFM SIGNAL
CLV SERVO CONTROL SIGNAL
CD-DECK MOTOR CONTROL SIGNAL
WIC03 KS5990/5990B DIGITAL SIGNAL PROCESSOR
WIC02 KA8309 SERVO SIGNAL PROCESSOR
WIC04 LC866216A MICOM
AUDIO SERIAL DATA
CPU(MICOM) DATA
KEY MATRIX
DISPLAY(V.F.D.)
CH-L
AUDIO DATA
CH-R
WIC05 SM5870 D/A CONVETER
WIC11,12 (OP-AMP) NJM2068SD LOW PASS FILTER
AUDIO OUT
CH-L
CH-R

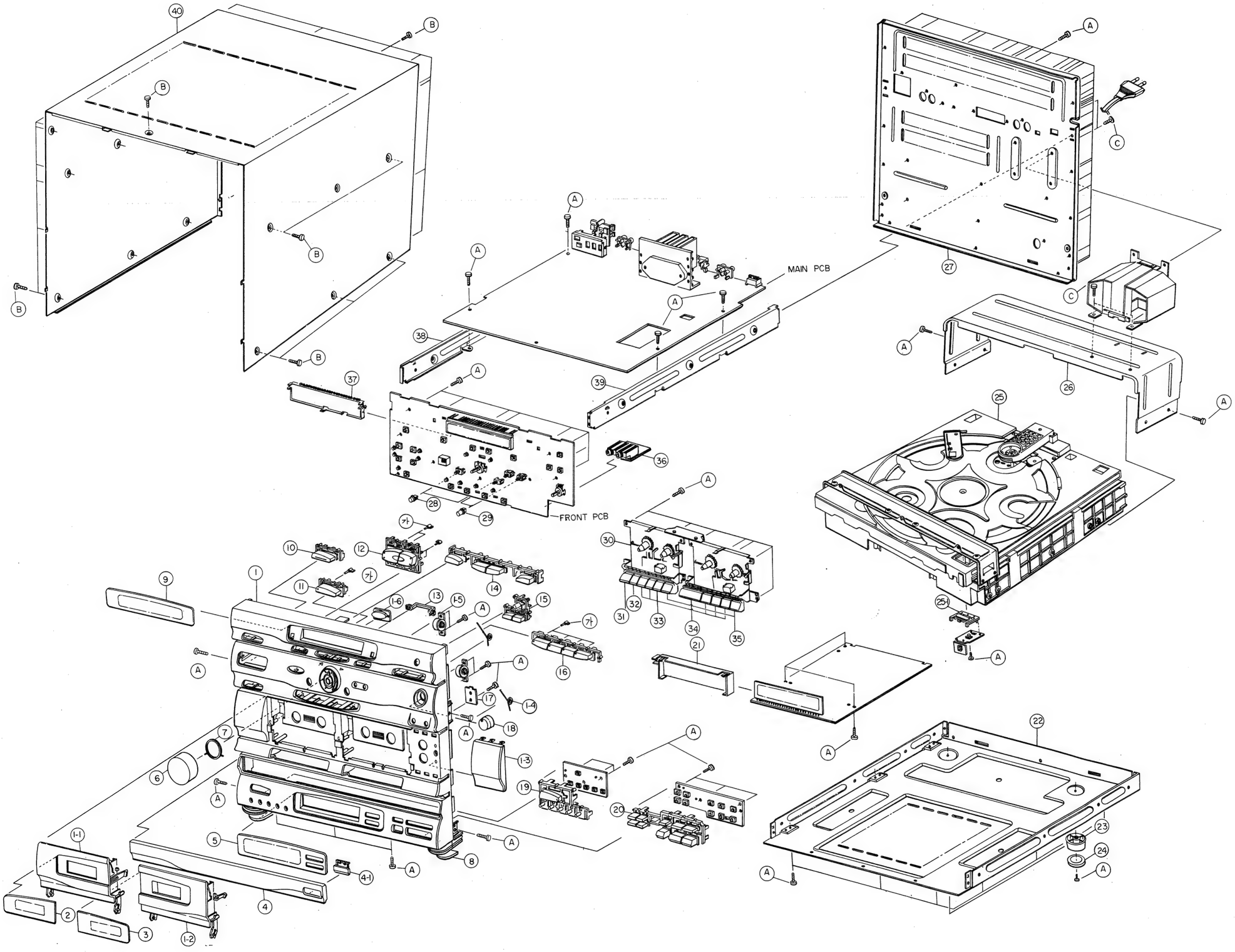
■ EXPLODED VIEW & PARTS LIST

1. MAIN SECTION

● MECHANICAL PARTS (MAIN)

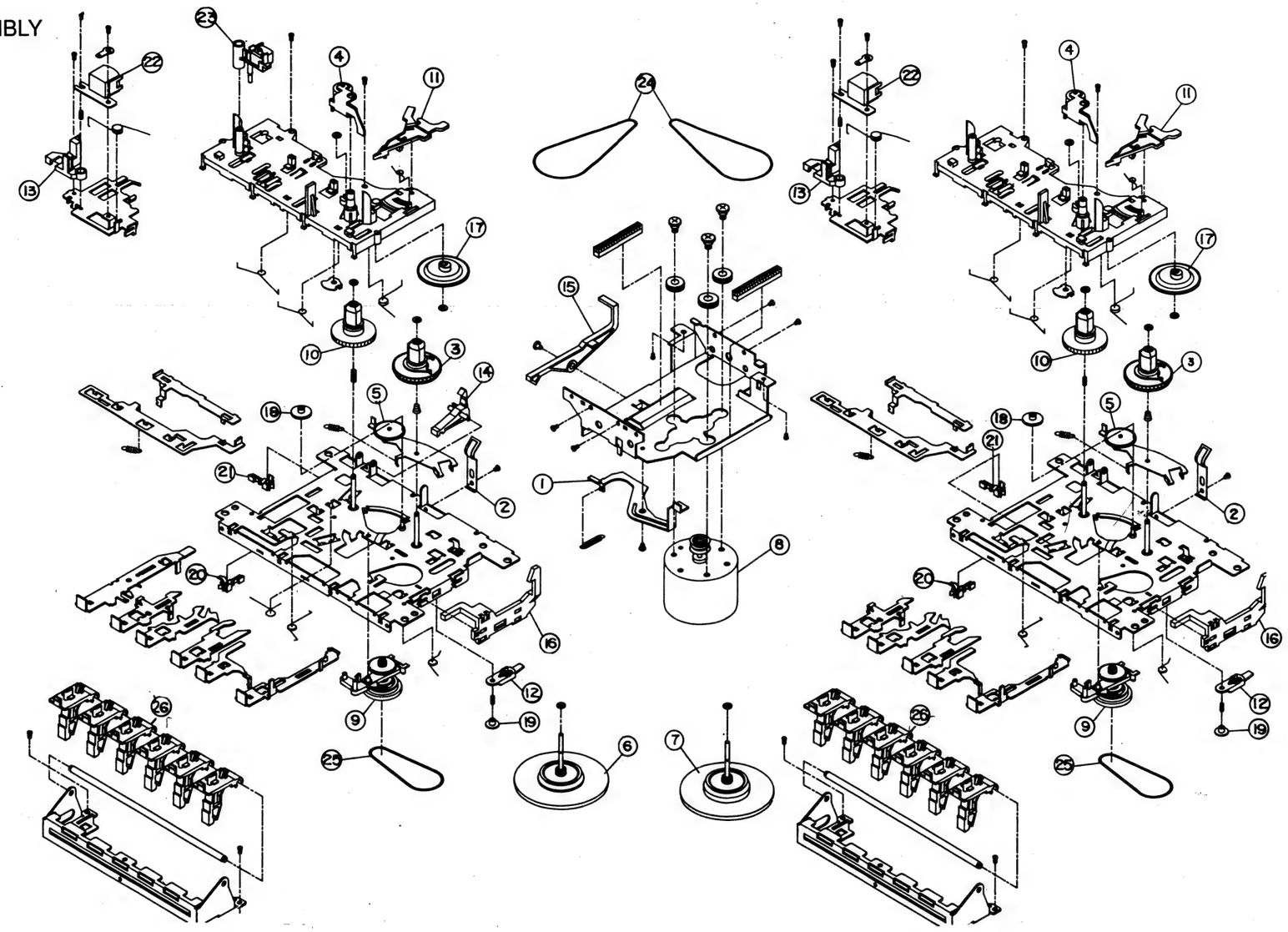
Ref No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
1	12000-0122-00	CABINET-FRONT ASS'Y	1	
1-1	14042-0070-00	DOOR-CASS(A) ; ABS BLK	1	
1-2	14042-0071-00	DOOR-CASS(B) ; ABS BLK	1	
1-3	14123-0006-00	DECO-FRONT (E) ; MIPS BLK	1	
1-4	16674-568-910	SPRING-DOOR ; SUS PI0.9	2	
1-5	15214-506-011	DEMPER-ASS'Y ; POM	2	
1-6	14074-0138-00	WINDOW-REMOCON ; ACRYL	1	
A	17458-230-101	SCREW-TAP TITE BH ; 3 X 10	2	
2	14074-0156-00	WINDOW-DOOR(A) ; ACRYL	1	
3	14074-0157-00	WINDOW-DOOR(B) ; ACRYL	1	
4	19112-0012-00	ASS'Y-CD DOOR	1	
4-1	14084-0344-00	KNOB-CD (OPEN) ; ABS BLK	1	
5	14074-0155-00	WINDOW-CD ; SMOKE ACRYL	1	
6	14084-0306-00	KNOB-VOLUME ; ABS BLK	1	
7	12724-0028-00	SPRING-VOLUME ; PWR 0.7	1	
8	16174-504-210	CUSHION-FOOT ; RUBBER	2	
9	14074-0154-00	WINDOW-TUNER ; SMOKE ACRYL	1	
10	14083-0302-00	KNOB-POWER ; ABS BLK	1	
11	19113-0010-00	ASSY-KNOB(EQ PA) ; ABS BLK	1	
11-1	12714-0019-00	LENS-FUNCTION ; ACRYL CLR	1	
12	19112-0008-00	ASSY-KNOB(EQ) ; ABS BLK	1	
12-1	12714-0019-00	LENS-FUNCTION ; ACRYL CLR	4	
13	12714-0018-00	LENS-VOLUME ;ACRYL CLR	1	
14	14083-0303-00	KNOB-PRESET ; ABS BLK	1	
15	14083-0304-00	KNOB-TUNING ; ABS BLK	1	
16	19113-0011-00	ASSY-KNOB (FUN) ; ABS BLK	1	
16-1	12714-0019-00	LENS-FUNCTION ; ACRYL CLR	4	
17	13014-0105-00	BRKT-MIC PCB ; SBHG 1.0T	1	
18	14084-0308-00	KNOB-BALANCE ; ABS BLK	1	
19	14083-0309-00	KNOB-DISC SKIP ; ABS BLK	1	
20	14082-0310-00	KNOB-CD PLAY ; ABS BLK	1	
21	13322-0087-00	HOLDER-FLT CD ; ABS BLK	1	
22	12001-0124-00	CABINET-BOTTOM ; SECC 0.8T	1	
23	16174-502-120	FOOT ; RUBBER	2	
24	16174-503-810	FOOT-CONTACT ; EVA RUBBER	2	
25	* CMS-CRI	CMS-CR1	1	
25-1	14083-0345-00	KNOB-CD(DS) ; ABS BLK	1	
26	12201-0077-00	CHASSIS-P/T ; SBHG 1.2T	1	
27	12001-0125-00	CABINET-REAR ;SECC 0.8T	1	
28	14084-0346-00	KNOB-PUSH(S) ; ABS BLK	2	
29	14084-0347-00	KNOB-PUSH (H) ; ABS BLK	2	
30	17159-0045-00	TAPE-DECK ; ADR 2006 FW	1	
31	14083-0348-00	KNOB-REC(CA) ; ABS BLK	1	
32	14083-0349-00	KNOB-PLAY (CA) ; ABS BLK	1	
33	14083-0313-00	KNOB-CASS (S) ; ABS BLK	6	
34	14083-0315-00	KNOB-CASS (L) ; ABS BLK	1	
35	14083-0314-00	KNOB-PAUSE ; ABS BLK	2	
36	19129-0058-5C	MIC PCB ASS'Y	1	
37	13322-0017-00	HOLDER-FL ; ABS BLK	1	
38	12202-0075-00	CHASSIS-FRAME (L) ; SECC 1.0T	1	
39	12202-0076-00	CHASSIS-FRAME (R) ; SECC 1.0T	1	
40	12000-0123-00	CABINET-TOP ; VINYL STEEL	1	
A	17458-230-101	SCREW-TAP TITE BH ; 2S-3 X 10	50	
B	17458-230-103	SCREW-TAP TITE BH ; 3 X 10 FZB	17	
C	17128-540-083	SCREW-TAP TITE BH ; 2S 4 X 8 FZB	4	

● EXPLODED VIEW (MAIN)



■ EXPLODED VIEW

2. CASSETTE DECK ASSEMBLY

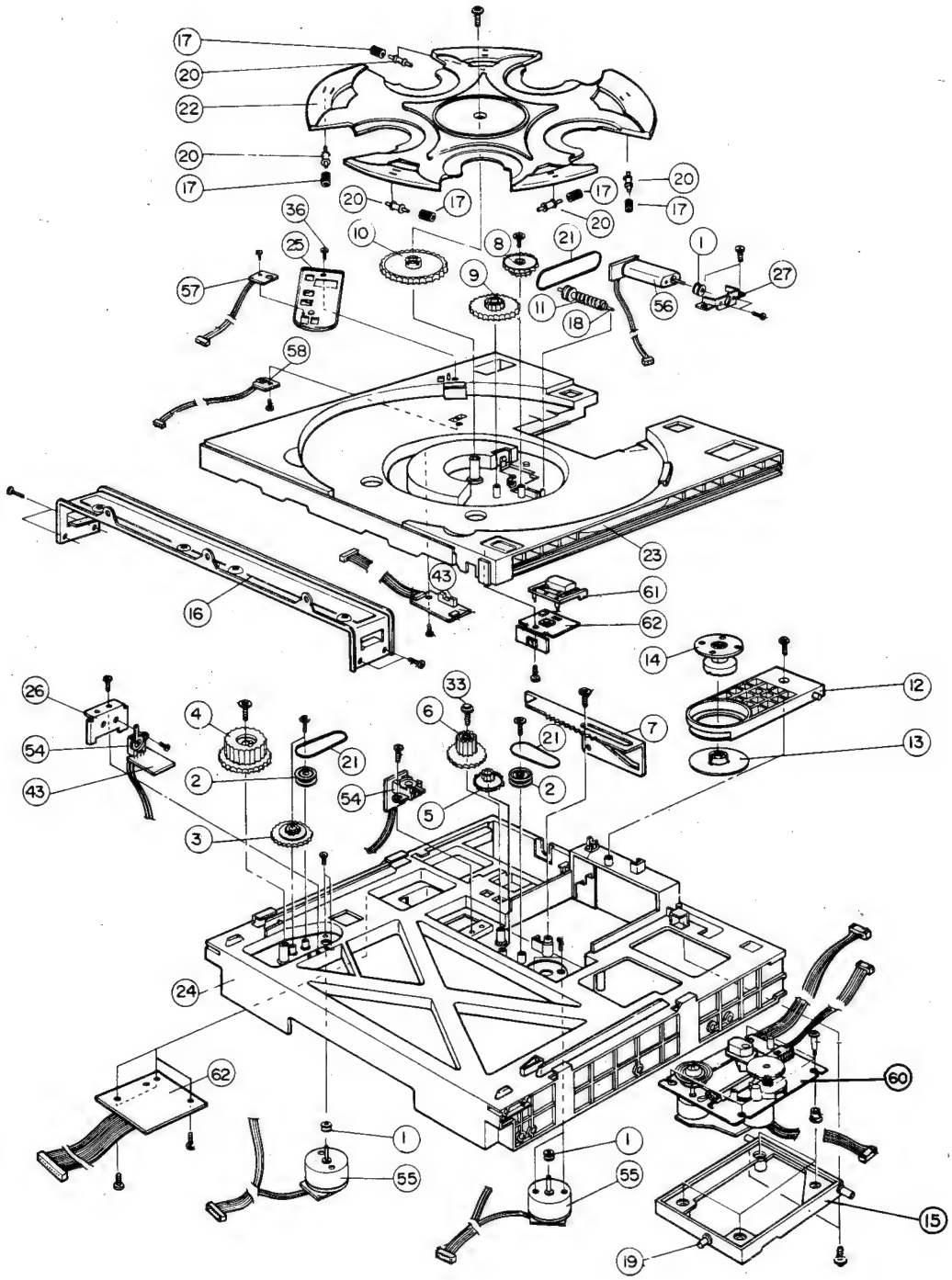


● PARTS LIST

Ref No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
	17159-0045-00	DECK-CASSETTE ; ADR2006 FW	1	
1	10000-607-186	LEVEL-SYNCHRO ; 11134-01280AA	1	
2	10000-607-146	SP PACK ; 51299-02506XC	2	
3	10000-607-101	TAKE UP REEL ASSY ; ADR28-010	2	
4	10000-607-103	PINCH ARM ASSY ; ADR26-001	2	
5	10000-607-104	IDLER ARM ASSY ; ADR02-042	2	
6	10000-607-105	FLYWHEEL GEAR S ASSY ; ADR15-021	1	
7	10000-607-106	FLYWHEEL GEAR D ASSY ; ADR15-022	1	
8	10000-502-020	MOTOR ; EG530YD2B	1	
9	10000-607-108	FR ARM ASSY	2	
10	10000-607-109	SUPPLY REEL GEAR ASSY	2	
11	10000-607-117	ARM-SENSOR 11102-00530AA	2	
12	10000-607-111	PAUSE LOCK CAM	2	
13	10000-607-113	HEAD BASE M	2	
14	10000-607-145	LEVEL REC SAFETY ; 11134-01000AA	1	
15	10000-607-184	LEVEL-RELEASE ; 11134-01240AA	1	
16	10000-607-160	LEVEL EJECT (F) ; 11134-01220AA	2	
17	10000-607-114	CAM GEAR	2	
18	10000-607-115	F.F GEAR ; 11128-00055AA	2	
19	10000-607-116	PAUSE CAP ; 11116-00011AA	2	
20	10000-607-178	LEAF SW (MAIN) ; MSW1541 XACV	2	
21	10000-607-179	LEAF SW (REC) MSW1716CV	1	
22	10000-523-008	R/P HEAD ; MS15R-AA2N1	2	
23	10000-607-162	ARM-MAGNETIC ; 11102-00520AA	1	
24	10000-607-159	BELT MAIN ; 59.7PI X 1.0T	2	
25	10000-607-156	BELT SUB ; 34.7 PI X 1.0T	2	
26	10000-607-128	BUTTON KNOB ; 11133-00010AA	12	

3. CD PLAYER DECK ASSEMBLY (CMS-CR1)

- **EXPLODED VIEW**



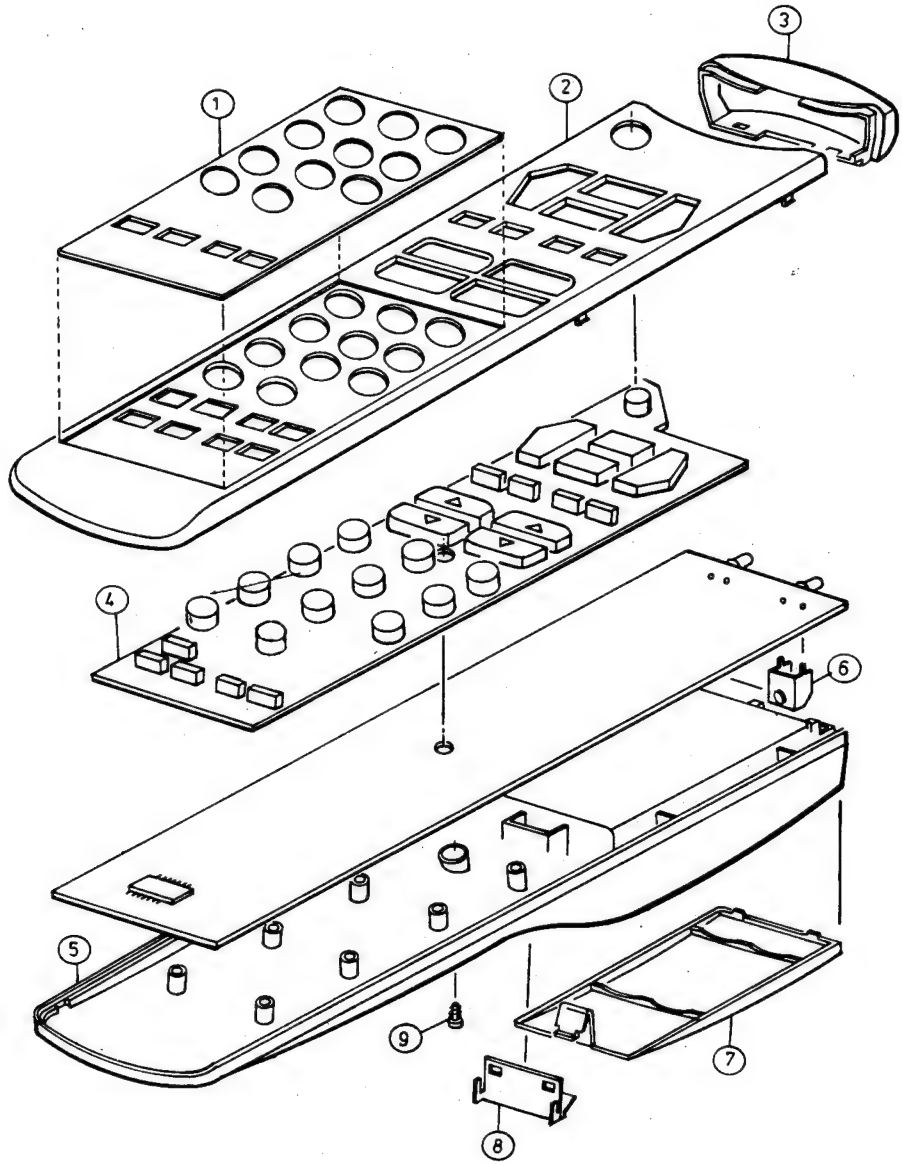
● PARTS LIST

(Service Available Parts)

Ref No.	CODE No.	DESCRIRTION & SPECIFICATION	Q`TY	REMARK
1	11504-0006-00	PULLEY-MOTOR ; CMS-CR1 D4.0 POM	2	
2	11474-0032-00	GEAR-PULLEY ; CMS-CR1 M0.6 Z16 SP POM	2	
3	11474-0033-00	GEAR-TRAY (1) ; CMS-CR1 M0.6/M0.6 Z50/Z17 SP	1	
4	11474-0034-00	GEAR-TRAY (2) ; CMS-CR1 M0.8/M0.6 Z44/Z68 SP	1	
5	11474-0035-00	GEAR-UD (1) ; CMS-CR1 M0.5/M0.6 Z17/Z45 SP	1	
6	11474-0036-00	GEAR-UD (2) ; CMS-CR1 M0.8/M0.5 Z19/Z60 SP	1	
7	11473-0037-00	GEAR-CAM ; CMS-CR1 M0.8 Z21 SP POM	1	
8	11474-0038-00	GEAR-ROULETTE (1) ; CMS-CR1 M0.5/M0.5 Z24/Z50 SP	1	
9	11474-0039-00	GEAR-ROULETTE (2) ; CMS-CR1 M0.8 Z60 SP POM	1	
10	11474-0040-00	GEAR-ROULETTE (3) ; CMS-CR1 M0.8/M0.5 Z22/Z72 SP	1	
11	11474-0031-00	GEAR-WORM ; CMS-CR1 M0.5 Z11 POM	1	
12	13322-0091-00	HOLDER-CHUCK ; CMS-CR1 BLK PC (GLASS 20%)	1	
13	12223-0009-00	TABLE-CHUCK ; CMS-CR1 T6.8 BLK	1	
14	13014-0119-00	BRACKET-CHUCK ; CMS-CR1 T0.8 WHT SECC	1	
15	11533-0026-00	LEVER-LIFER (DECK) ; CMS-CR1 L115	1	
16	13012-0118-00	BRACKET-FRAME ; CMS-CR1 T1.2 WHT SECC	1	
17	11524-0004-00	ROLLER-RUBBER ; CMS-CR1 D6.5 L4 CR (NEOPLENE)	5	
18	11404-0052-00	SHAFT-WORM ; CMS-CR1 D2.5 L40 SUS304	1	
19	11404-0053-00	SHAFT-DECK ; CMS-CR1 D5.5 L15.7 SUS304	1	
20	11524-0003-00	ROLLER-DISC ; CMS-CR1 D4 POM	5	
21	11494-0004-00	BELT-CISC ; CMS-CR1 FR W1.5 T1.5 L67.23 CR	3	
22	13601-0008-00	TRAY-ROULETTE ; CMS-CR1 W168.4 L168.4 ABS	1	
23	13600-0009-00	TRAY-DISC ; CMS-CR1 W343 L364 ABS	1	
24	12200-0084-00	BASE-MAIN ; CMS-CR1 BLK ABS	1	
25	13014-0120-00	BRACKET-SENSOR ; CMS-CR1 T1.0 WHT SECC	1	
26	13014-0121-00	BRACKET-SWITCH ; CMS-CR1 T1.0 WHT SECC	1	
27	13014-0184-00	BRACKET-MOTOR ; CMS-CR1 T1.2 WHT SECC	1	
43	16219-0003-00	SENSOR-ROULETTE ; SG-207 CMS-CR1	1	
54	B3006-0048	SW-SLIDE ; 2C2P NSH 12V 50DEG. CMS-CR1 SSCF21	2	
55	B3070-0002	MOTOR-DC ; RF-500TB 9V	2	
56	16829-0006-00	MOTOR-DC ; FF-180SH-11310 7.6V	1	
57	16219-0002-00	SENSOR-DO ; EL-S3G CMS-CR1	1	
58	16219-0001-00	SENSOR-DI ; ST-23G CMS-CR1	1	
60	*CMS-V30NM6	DECK-CD ; CMS-V30	1	ASS`Y
61	14083-0345-00	KNOB-CD (DS); SCM8300 BLK ABS	1	
62	CMSCR1PCB	PCB SUB ASS`Y ; CMS-CR1	1	ASS`Y

4. REMOTE CONTROL

● **EXPLODED VIEW**



● PARTS LIST

Ref No.	CODE No.	DESCRIPTION &SPECIFICATION	Q'TY	REMARK
1	14014-0005-00	INLAY-REMOCON ; PC T0.5 BLK	1	
2	12002-0054-00	CABINET-TOP ; ABS94HB T2 BLK MQ360R	1	
3	12713-0008-00	LENS-REMOCON ; PC MQ360R T2.5	1	
4	14083-0136-00	KNOB-REMOCON ; SILICON BLK MQ360R	1	
5	12001-0055-00	CABINET-BOTTOM ; ABS94HB T2 BLK MQ360R	1	
6	12724-0016-00	SPRING-GEAR ; TS STS-W P1.0.5	2	
7	13313-0026-00	COVER-BATTERY ; ABS94HB T1.5 BLK MQ360R	1	
8	12724-0047-00	SPRING-BATTERY ; PS SUS T0.3 W15.5 L9M	1	
	11449-518-101	CONDENSER AXIAL-LED ; 50V UP050 B100-K	2	
	12149-401-150	TRANSISTOR ; KSD471-Y, TAPE	1	
	14539-504-030	CERAMIC-RESONATOR ; CSB455EBL	1	
	B4012-0014	IC-LINEAR ; LC7464M-8117 SOP REMOCON	1	

ELECTRICAL PARTS LIST

⚠ indicates parts for circuit safe guarding purpose. Therefore, when replacing, be sure to use specified parts only.

1. MAIN SECTION

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
RR2	11048-477-821	R-METAL OXIDE ; RS1T 820-J MINI TYPE	1	⚠
AR9L,9R	11048-477-479	R-METAL OXIDE ; RS1T 4.7-J MINI TYPE	2	⚠
RR12,RR1	11048-577-331	R-METAL OXIDE ; RS2T 330-J MINI TYPE	2	⚠
AR4,7	11058-223-101	R-FUSIBLE ; CRF 1/4W 100-J	2	
RFR2	11058-377-011	R-FUSIBLE ; RF1/2T 1-J	1	⚠
RFR1	11058-477-109	R-FUSIBLE ; BF 1T 1-J	1	⚠
CVR1,IVR1	11249-102-024	VR - SEMI TAPE-H ; EVN - DJA A03B53 (5k)	2	
DVR1L,1R,IVR2	11249-102-064	VR - SEMI TAPE-H ; DVN-DJA A03B54 (50K)	2	
JVR1L,1R	11249-102-074	VR - SEMI TAPE-H ; DVN-DJA A03B15(100K)	2	
RC1,2	11607-105-222	C-ELECTROLYTIC ; MS SMS 35V 2200M(16X31)	2	
RC3	11607-105-332	C-ELECTROLYTIC ; MC SMS 35V 3300M(18X35.5)	1	
ITC1,2,OTC1,2	11829-512-030	C-TRIMMER ; TZ03R 20P	4	
QIC3	12119-401-720	IC-ANALOG SWITCH ; TC4066BP	1	
RIC1	12109-401-690	IC-REGULATOR ; MC7812C/KIA7812P	1	
QIC4	12119-101-830	IC-E/C VR ; TC9153 AP	1	
IIC1	12119-102-720	IC AM, FM, IF ; LA1851N	1	
AIC1	12119-208-500	IC-POWER ; STK 4121-2	1	
QIC1.5	12119-401-630	IC-DUAL OPAMP ; MC4558S/NJM4558S	2	
RIC2	12119-601-770	IC-REGULATOR ; MC7805	1	
RQ1	12139-103-560	TRANSISTOR ; KSA 614-0	1	
CQ2,5,6,LQ2,IQ6,7	12149-101-520	TRANSISTOR ; KSA 733-Y, TAPE	6	
CA1,QQ1,2,3,1L,1R,2L, QQ2R,3L,3R,4L,4R	12139-301-310	TR-W/RESISITOR ; KSC 1009-Y	12	
EQ1	12149-301-820	TRANSISTOR ; KSC 1222-L, TAPE	1	
CQ4,DQ1L,1R,OQ1, EQ2,KQ1,2,3,4,3L,3R, RQ5,6,CQ7,IQ1,2	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	16	
IQ4	12159-301-520	TR-DIGITAL ; KSR 1004	1	
KQ1L,1R,2L,2R,RQ3,4,LQ1	12149-301-930	TRANSISTOR ; KSC 1008-Y, TAPE	7	
RQ2	12149-401-070	TRANSISTOR ; KSD 73-Y	1	
CQ3	12149-401-150	TRANSISTOR ; KSD 471-Y, TAPE	1	
QQ4,5	12159-301-330	TR-DIGITAL ; KSR2003, TAPE	3	
AQ1,BQ1,IQ3	12159-301-760	TR-DIGITAL ; KSR2004	3	
RD10,20,2,3,4,5,6	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	7	
RZD5.CZD1	12169-403-210	DIODE-ZN ; UZP 4.7B/RD4.7F	2	
RZD1,2	12169-403-910	DIODE-ZN 1W11.4-12.6V UZP-12B	2	
OWC1	12169-501-005	DIODE ; KV1236	1	
ILF1L,1R	12450-304-040	COIL-LOW PASS FILTER ; FV-A D-BASE	2	
IT2	12619-020-067	COIL 7 CAN ; AB FM BLU	1	
IT1	12619-030-005	COIL-CAN AC 450KHz YEL	1	
OL2	12619-047-202	COIL-CAN AD510UH 220KHz BRN	1	
OL1	12619-047-203	COIL-CAN ; AD 110UH 796KHz RED	1	
IL1	12619-561-000	COIL-MW ANT ; MURHN-K5268KAI 250MH	1	
IL2	12619-566-913	COIL TRANS TEN, CAN ; AF 2.4MH FLW RED	1	
LT1	12619-577-771	COIL-BIAS OSC ; RCHNS-5371EQJ	1	
SPK	13303-500-620	TERMINAL-BOARD PUSH, N ; 4P PUSH HOOK	1	
	13339-417-030	JACK-RCA ; 2P (S-434)	2	
FCF1,2,3	14529-301-770	FILTER CERAMIC ; SFE 10.7MJ RED	3	
ICE2	14539-504-100	CERAMIC RESONATOR ; CSB456F 15	1	
	A3059-0006	TERMINAL-BOARD PUSH ; SP-030 4P ANT	1	
BIC1	A4006-0016	IC-ASIC ; KA22293 QFP 48	1	
JIC1	A4012-0214	IC-LINEAR ; KA22292 QFP PRE AMP	1	
	B1290-0001	TUNER-FM ; FE415-G11 4G 750HM	1	
	14529-301-753	FILTER-CERAMIC ; SFE 10.7 MS3G-A-TF21	2	⚠
630MA	14709-241-160	FUSE ; T250V 0.63A	1	⚠

2. FRONT SECTION

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
UIC3	12119-101-820	IC-SW ; TC9135P	1	
UQ1	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	1	
UQ4	12159-301-760	TR DIGITAL ; KSR2004	1	
UQ2,3	12159-301-790	TR DIGITAL ; KSR1009	2	
UD19	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	1	
UZD1	12169-404-110	DIODE-ZN ; RD5.6 FB/UZP-5.6B	1	
	12199-101-080	REMOCON EYE ; MM-001A (CD22R MESH)	1	
ULD7,8,9,10,11,3,4,5,6	12309-117-520	LED-AMBER ; SEL 3913K TP5 TAPPING	9	
MIC/HEAD PH	13339-113-020	JACK-HEADPHONE ; HLJ2316-01-3040 12/9.5	2	
USW2, ASW1, KSW1,2	13529-203-930	SW-PUSH ; SPEA122S CO11	4	
UX1	14539-003-010	CRYSTAL-UNIT ; HC49-U4.5MHz	1	
QVR1	A1050-0014	VR-ROTARY ; RK16K 1170Z02-53W 50KW	1	
USW1	A3012-0007	SW-ROTARY ; RK 16K 1170	1	
UFL1	A4153-0029	V.F. DISPLAY ; SVA-13BS05 SCM9100 TUNER	1	
	B1104-0170	C-ELEC ; AC310-502-G473Z5R5 CA92 W5.5V	1	
UIC3	B4002-0264	IC-MCU ; LC7233N-8805 SCM8300 QFP	1	
QIC4	B4008-0888	IC-DRIVE ; MSC7110-01SS DIP F.L.T	1	

3. CD PLAYER

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
WR34,XR19, 20	11018-175-222	R-METAL FILM ; RN1/8T 2.2K-F	3	
WR22,23,30,32,35,36	11018-175-223	R-METAL FILM ; RD1/8T 22K-F	6	
WR33	11018-175-332	R-METAL FILM ; RN 1/8T 3.3K-F	1	
WR31,37,38,46	11018-175-333	R-METAL FILM ; RN 1/8T 33K-F	4	
RR02	11018-377-152	R-CARBON ; RD 0.5T 1.5K-J	1	
WR47	11048-577-101	R-METAL OXIDE ; RS2T 100-J MINI TYPE	2	
UR320	11058-277-229	R-FUSIBLE ; RF 1/4T 2.2J	1	⚠
WSR01,02,03,04	11249-102-044	VR-SEMI TAPE-H ; DVN-DJA A03B24 (20K)	4	
WSR05	11249-102-104	VR-SEMI TAPE-H ; DVN-DJA A03B23 (2K)	1	
RC3	11607-104-222	C-ELECTROLYTIC ; MC SMS 25V 2200M (16X25)	1	
WIC05	12109-303-280	IC-1BTTDAC ; SM5870CS	1	
WIC14, 16	12109-401-730	IC-REGULATORS ; MC7808BF 85W	2	
WIC06, 07	12119-202-920	IC-BTL DRIVER ; KA9257	2	
WIC08, 09, 10	12119-203-500	IC MOTOR DRIVER ; LB 1641	3	
WIC02	12119-203-780	IC-SSPROCESSOR ; KA8309/KA8309B	1	
WIC01	12119-203-790	IC-RF AMP ; KA9201	1	
WIC11, 12	12119-401-760	IC-OP AMP ; NJM2068SD/UPC4570HA	2	
WIC13	12119-601-160	IC-REGULATOR ; TA78L005/MC78L05AC	1	
WIC15	12119-601-770	IC-REGULATOR ; MC7805	1	
RQ01	12139-103-560	TRANSISTOR ; KSA 614-0	1	
UQ301	12149-101-520	TRANSISTOR ; KSA733-Y, TAPE	1	
WQ01	12149-202-050	TRANSISTOR ; KSB564A-Y	1	
RQ02, YQ03, 04	12149-301-900	TRANSISTOR ; KSC 945-Y, TAPE	3	
YQ02	12159-301-330	TR-DIGITAL ; KSR2003, TAPE	1	
XQ01,UQ302,303,304	12159-301-780	TR DIGITAL ; KSR1003	4	
WQ02, 03	12159-301-800	TR-DIGITAL ; R1007/108M/124 X S	2	
WD10, 11	12169-201-080	DIODE-RECTIFIER ; 1N 4001, TAPE	2	
WD01,02,03,04,05 06,07,14	12169-301-400	DIODE-SWITCH ; 1N 4148M ROHM(SMALL)	8	
WZD03	12169-404-790	DIODE ZENER ; 500MW UZ 5.6BSB TAPING	1	
WZD01, 02	12169-404-800	DIODE ZENER ; 500MW UZ 6.2BSB TAPING	2	
WFL01	13322-0087-00	HOLDER-FL CD ; SCM8300 BLK ABS	1	
WX02	14539-503-083	CERAMIC-RESONATOR ; CSA 16.93M X 040-TF01	1	
WX01	14539-503-130	CERAMIC-RESONATOR ; CSA 12.0MT	1	
WIC15, 16	15684-505-820	HEAT-SINK (CD) ; AL 1.0T SCM-7000	2	
WIC03	A4012-0111	IC-LINEAR ; KS5990/59910-YC QFP CD-DSP	1	
WFL01	A4153-0051	V.F. DISPLAY ; SVA 10SS02 CD-CHANGE ROUL	1	
WIC04	B4002-0279	IC-MCU ; LC866216A-5406 SCM-8300CD QFP	1	
WSW01~16	13559-901-100	SWITCH-TACK ; SKHV 10910A	16	

3. GENERAL SECTION

1) AC110V/220V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/TRANS	A1199-0069	TRANS-POWER ; EI66 X 40 AC110V/220V 60Hz/50Hz	1	⚠
VOLTAGE SELECTOR	13599-502-020	VOLT SELECTOR ; PCB 00120353A(354) 110V/220V	1	⚠
POWER CORD	A6006-0187	POWER CORD ; KKP-419C KLCE-2F/0.75 W/S	1	⚠
	14709-241-220	FUSE ; T250V 1.25A 20EUR	1	⚠
	14709-241-160	FUSE ; T250V 0.63A	1	⚠

2) AC 120V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/TRANS	A1199-0069	TRANS-POWER ; EI66 X 40 AC115/230V 60/50Hz	1	⚠
	A1199-0069	TRANS-POWER ; EI660 X 40 AC120V 60Hz UL/CSA	1	⚠
	A6006-0193	POWER CORD ; KKP-10 SPT-1#2/18 2MT W/S	1	⚠
	A6006-0195	POWER CORD ; KKP-10W SPT-1#2/18 2MT W/S	1	⚠
	14709-241-220	FUSE ; T250V 1.25A 20 EUR	1	⚠

3) AC 230V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/TRANS	A1199-0069	TRANS-POWER ; EI 115/230V 50/60Hz DC21V BLK	1	⚠
POWER CORD	A6006-0187	POWER CORD ; KKP-419C KLCE-2F/0.75 W/S	1	⚠
	14709-241-160	FUSE ; T250V 0.63A	1	⚠

4) AC 110V-130V/220V-240V UNIT

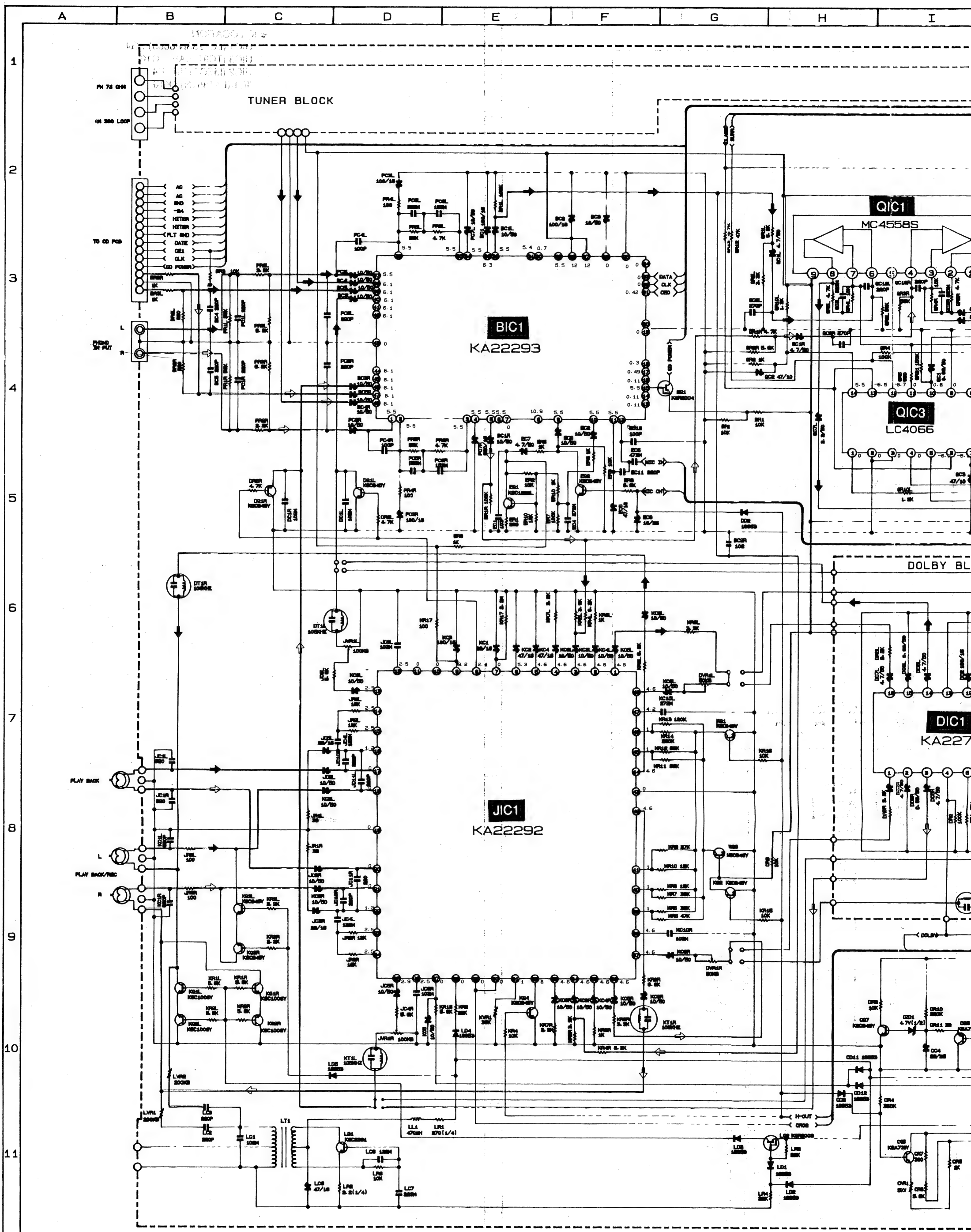
LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/TRANS	A1199-0069	TRANS-POWER ; EI 66 X 40 AC115/230V 60Hz/50Hz	1	⚠
POWER CORD	A6006-0187	POWER CORD ; KKP-419 KLCE-2F/0.75 W/S	1	⚠
	14709-241-160	FUSE ; T250V 0.63A	1	⚠
	14709-241-220	FUSE ; T250V 1.25A 20 EUR	1	⚠

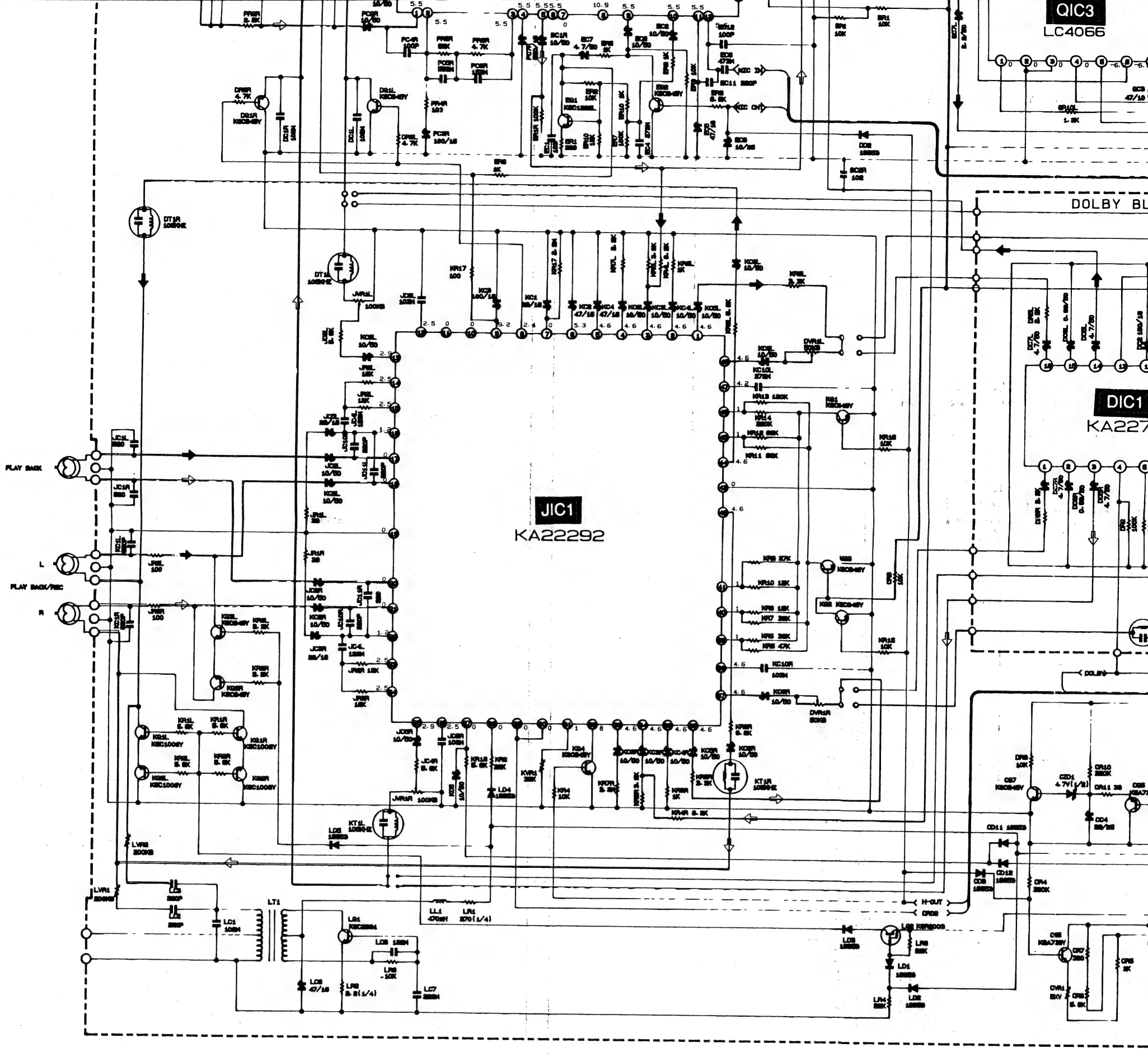
5) AC 240V UNIT

LOCATION No.	CODE No.	DESCRIPTION & SPECIFICATION	Q'TY	REMARK
P/TRANS	A1199-0069	TRANS-POWER ; EI 66 X 40 AC115/230V 60Hz/50Hz	1	⚠
POWER CORD	A6006-0177	POWER CORD ; KP-702 LTSA-2F/0.75 2MT BLK	1	⚠
	14709-241-160	FUSE ; T250V 0.63A	1	⚠

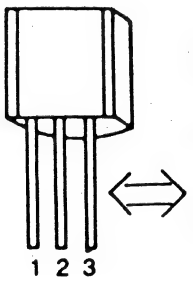
■ SCHEMATIC DIAGRAM

1. MAIN SECTION



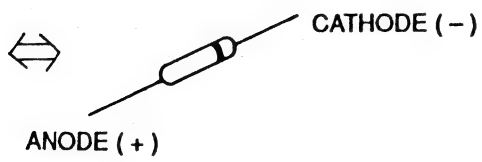


● TR

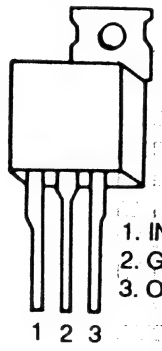


TR	1	2	3
KSR2458,KSR1003 KSR2004,KSR1002	E	C	B
KSC945,KSC1008 KSA733,KSA708, KSC838	E	B	C

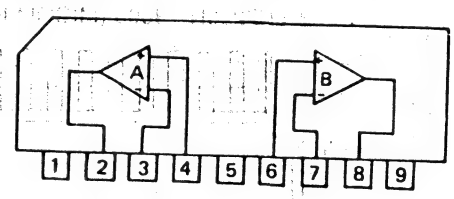
● DIODE 1N4148M/1SS53, 1N4001
ZENER DIODE



● MC7805,7812
(REGULATOR IC)
RIC1,2

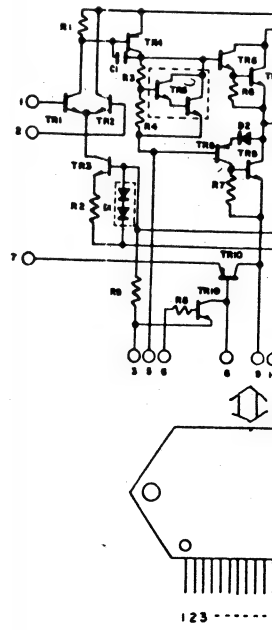


● NJM2068SD/UPC4570HA(OP AMP): QIC5



1.V+
2.A OUTPUT
3.A-INPUT
4.A+INPUT
5.V-
6.B+INPUT
7.B-INPUT
8.B OUTPUT
9.V-

● STK4181-V (F



QIC3
C4066

DOLBY BLOCK(OPTION)

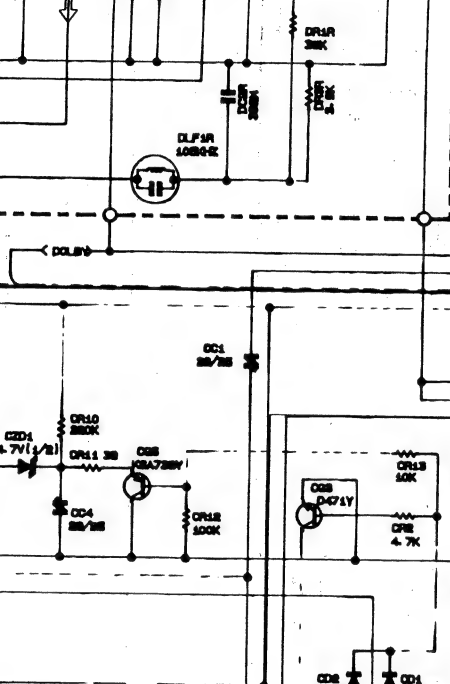
DIC1
KA2271

AIC1
STK4121-2

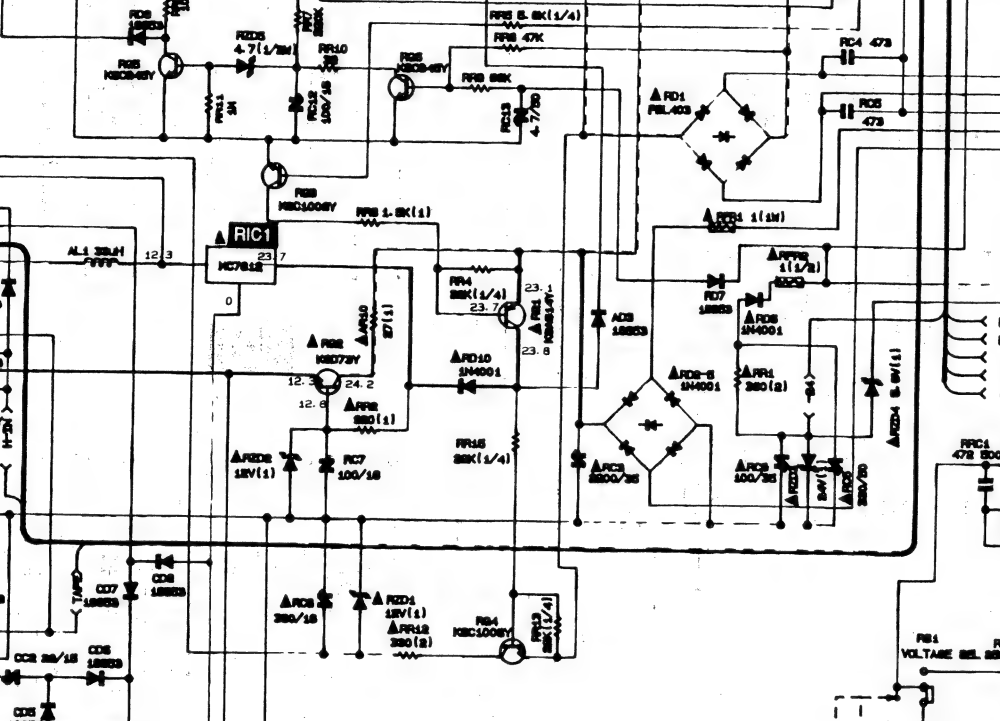
RIC1
MC7812

QIC2
MC7805

● STK4181-V (POWER IC) : AIC1

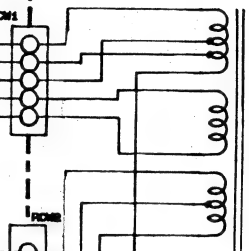


● KA22293 : BIC1

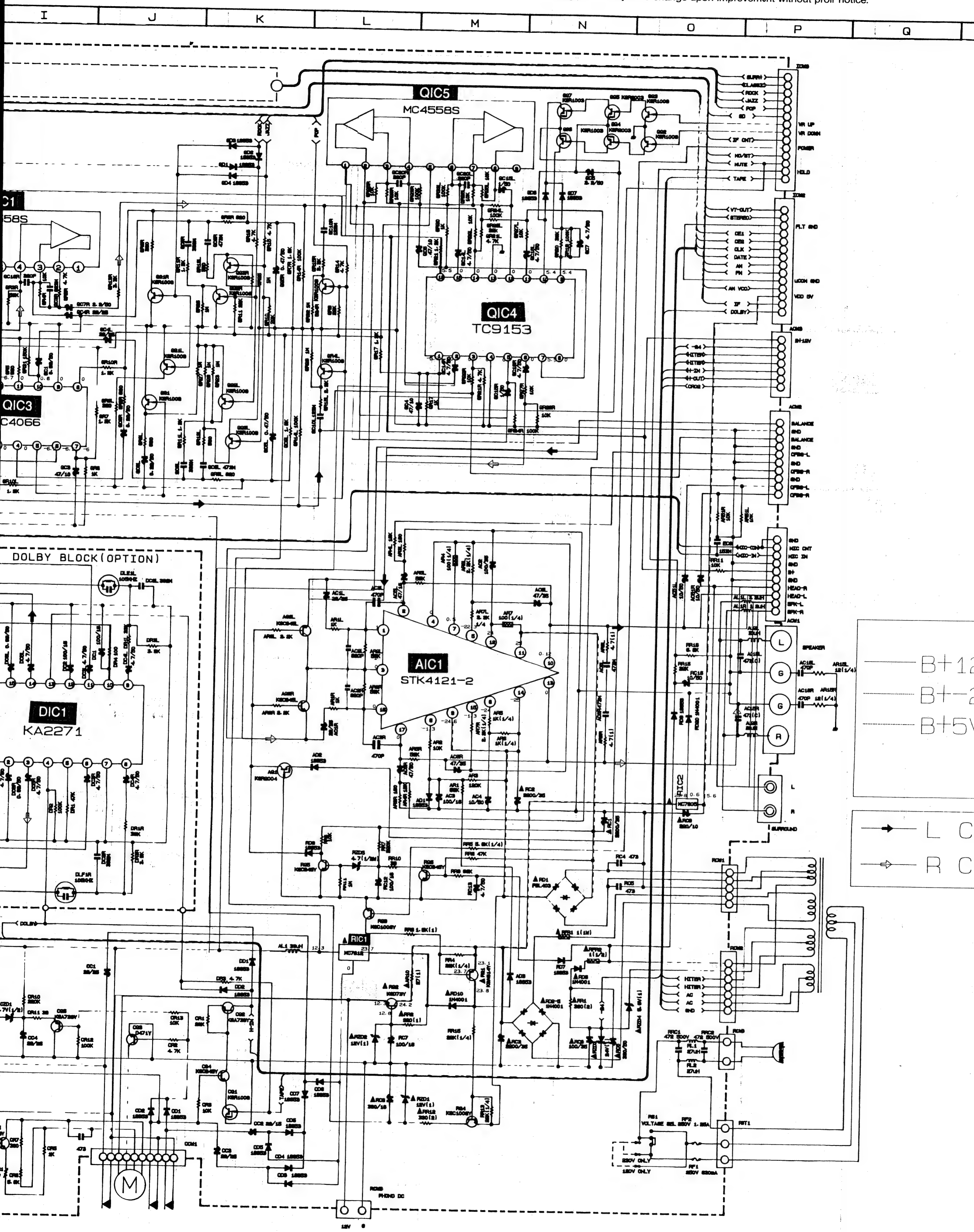


● TC9153AP (E/C VR) : QIC4

PIN CONNECTION

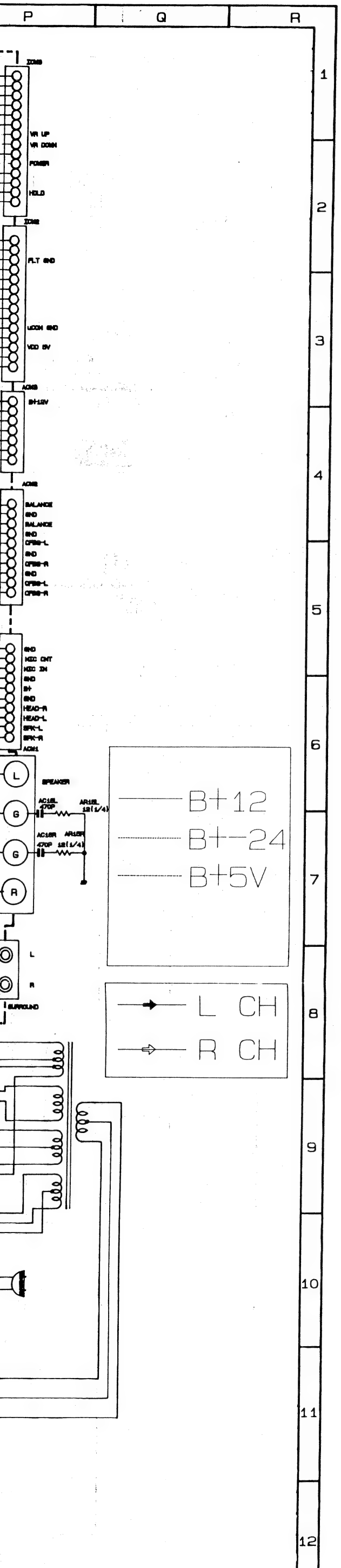


1. The unit of all resistors is Ω unless otherwise stated. (K : K Ω, M : M Ω). All resistors are 1/4W or 1/8W un
2. The unit of all capactiors is μF unless otherwise stated. (P : PF).
3. The schematic diagram is subject to change upon improvement without proir notice.



M : M Ω). All resistors are 1/4W or 1/8W unless otherwise stated.

without proir notice.

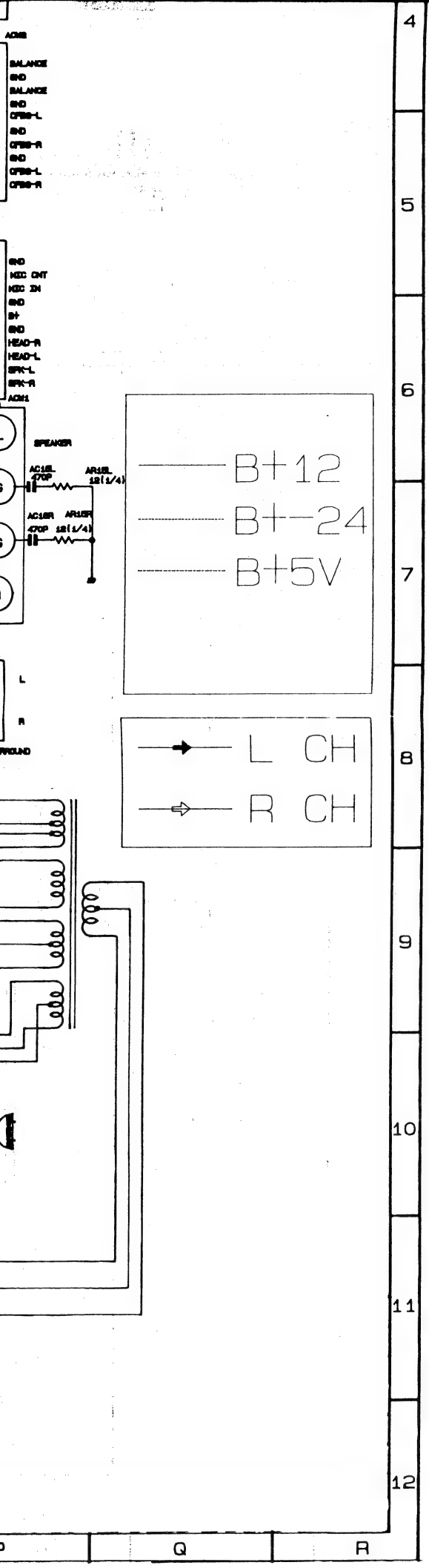


● IC LOCATION
QIC3 (LC4066) : I4
RIC1 (MC7812C/KIA7812P) : L9
QIC4 (TC9153AP) : M3
JIC1 (KA22292) : E8
AIC1 (STK4121 - 2) : M7
QIC5 (MC45582) : M1
RIC2 (MC7805) : 08
BIC1 (KA22293) : E3

● TR LOCATION
RQ1 : M9
CQ2,5,6 ; K10, I11, I10
CQ1,QQ1,2 1L
CQ1R,L,2L,R,3L,3R,4L,R:K11,J4,
O2,O1,J4,3,K4,3,I 4,3

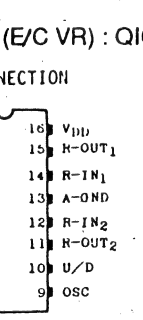
EQ : E5
AQ8L,R,CQ4,DQ1L,R,EQ2,
KQ1,2,3,4,3L,R,RQ5,6,
CQ7 : K6,K7,K10,D5,C5,F5,
G7,9,8,E10,C9,L8,M8,I10
LQ1 : D11
KQ1L,R,2L,R,RQ3,4,: B9,C9,
B10,C10,L9,M11
RQ2 : L10
CQ3 : J10
LQ2, QQ4,5 : D11, N2, N1
AQ1,BQ1 : K8, G4

AGT,DGT : K8, G4

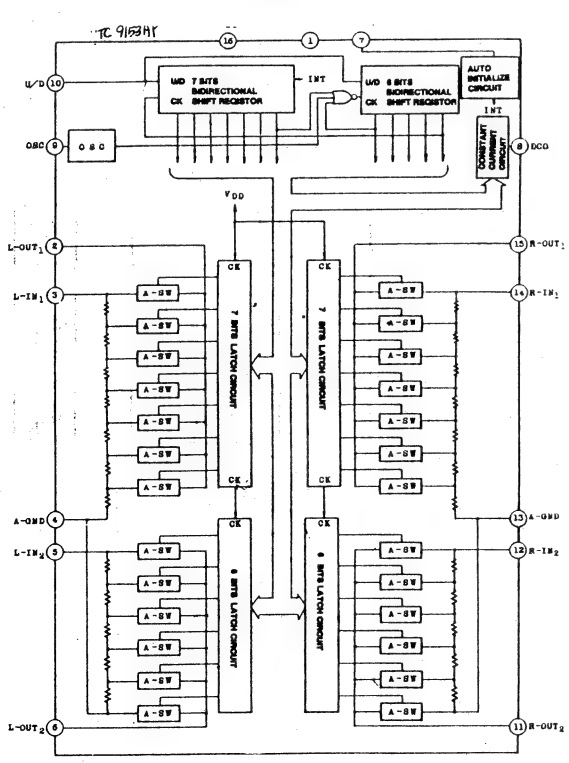


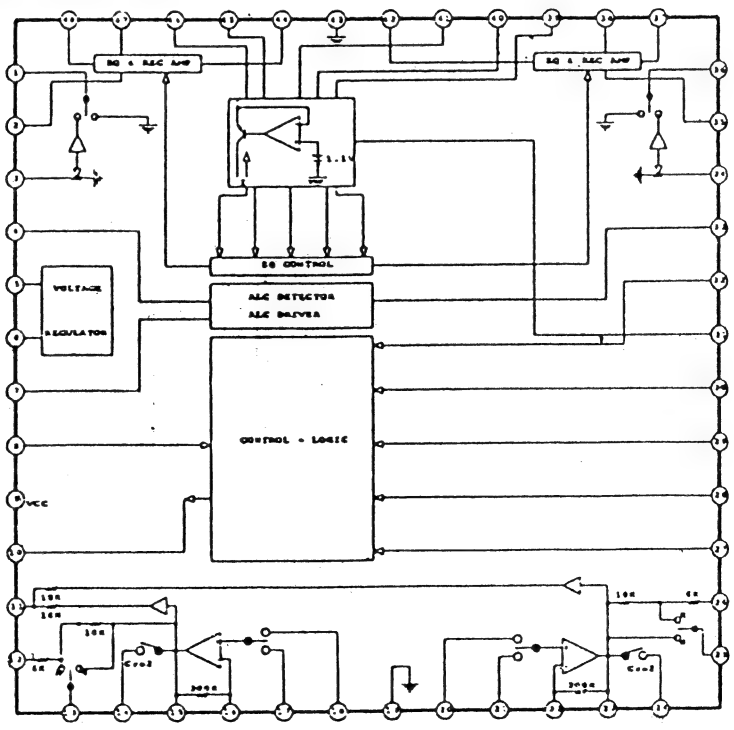
(E/C VR) : QIC4

NECTION

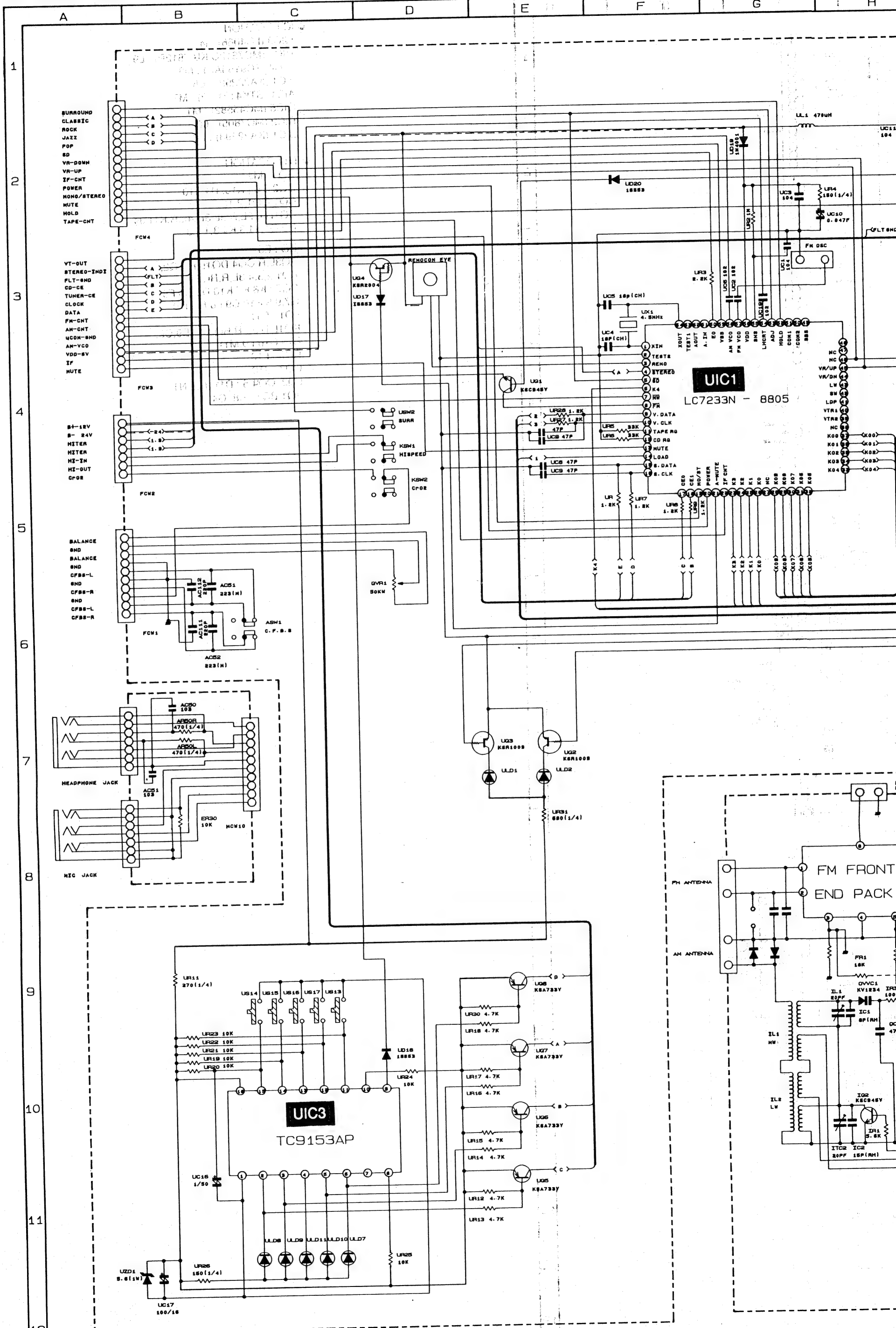


● KA22292 (AMP IC) : JIC1





2. FRONT SECTION

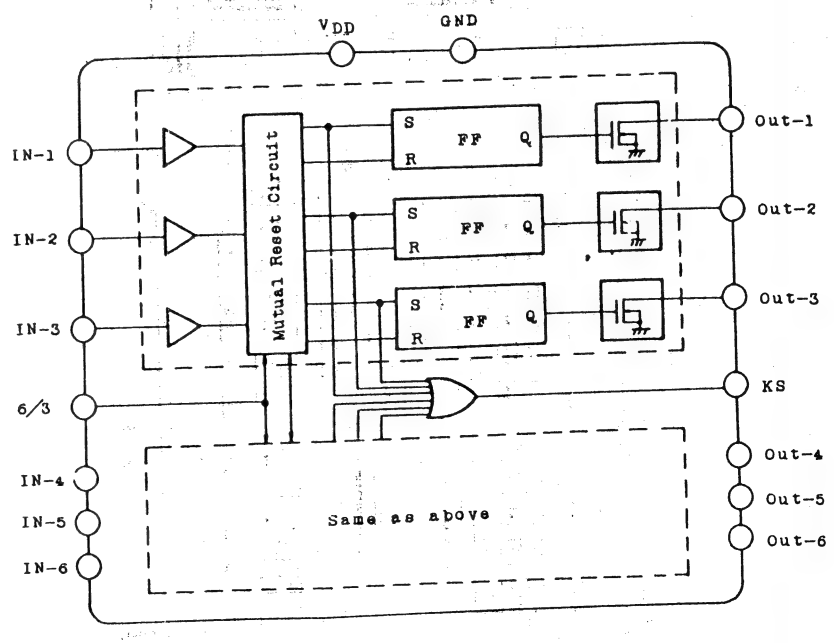


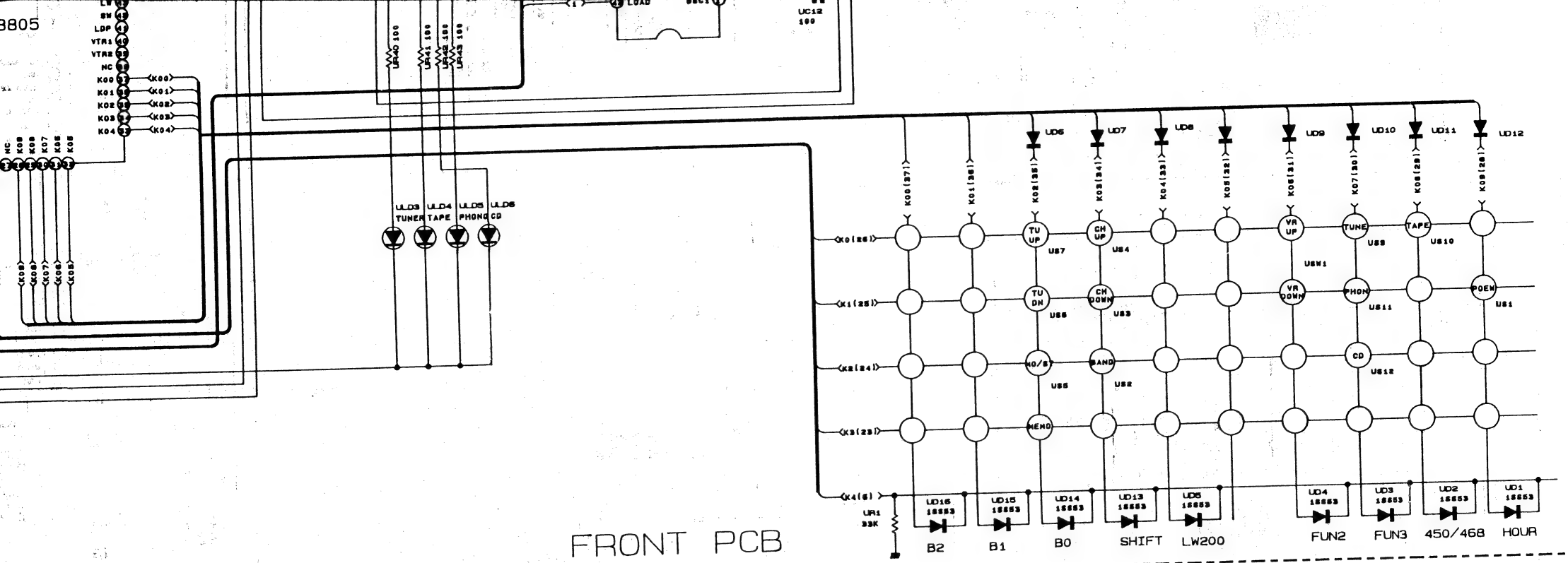
LC7233N - 8805

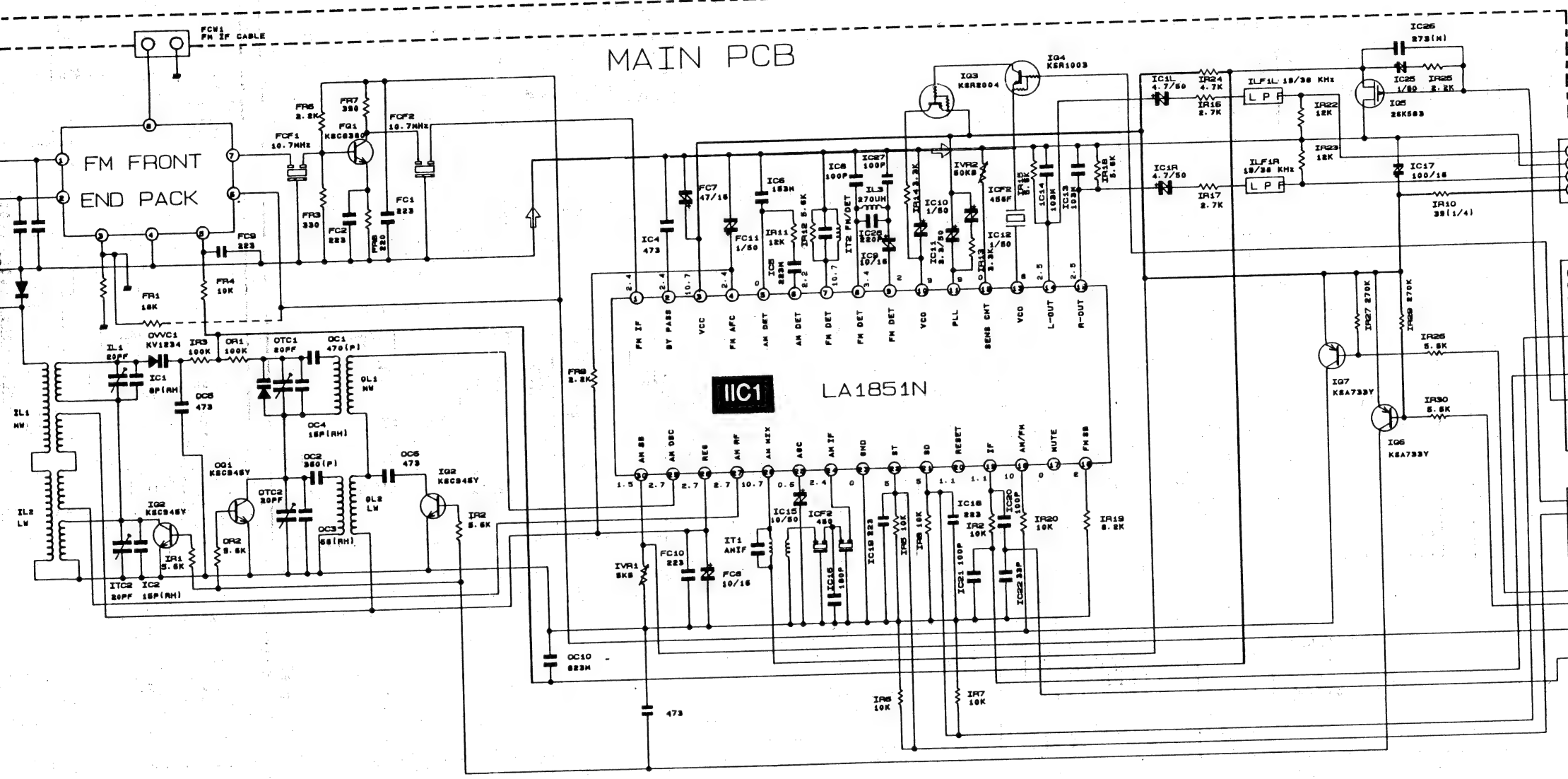
FCW3
FCW2
FCW1
B+ 12V
B- 24V
MITER
MITER
MI-IN
MI-OUT
CrO2
BALANCE
GND
BALANCE
GND
CFBS-L
GND
CFBS-R
GND
CFBS-L
CFBS-R
USW2 SURR
KSW1 HISPEED
KSW2 CrO2
GVR1 50KM
ASW1 C.F.S.S
AC51 223(M)
AC52 223(M)
AC111 220P
AC112 220P
AC50 103
AC51 103
AR50R 470(1/4)
AR50L 470(1/4)
HEADPHONE JACK
MIC JACK
ER30 10K
MCW10
UG3 KSR1009
UG2 KSR1009
ULD1
ULD2
UR31 680(1/4)
UIC3
TC9153AP
UR11 270(1/4)
US14 US15 US16 US17 US13
UR23 10K
UR22 10K
UR21 10K
UR19 10K
UR20 10K
UD16 1SS83
UR24 10K
UC15 1/50
UR30 4.7K
UR18 4.7K
UR17 4.7K
UR16 4.7K
UR15 4.7K
UR14 4.7K
UR12 4.7K
UR13 4.7K
UG8 KSA733Y
UG7 KSA733Y
UG6 KSA733Y
UG5 KSA733Y
ULD8 ULD9 ULD11 ULD10 ULD7
UR25 10K
UZD1 5.6(1W)
UR26 150(1/4)
UC17 100/16
FM ANTENNA
AM ANTENNA
FM FRONT END PACK
FR1 10K
IC1 8P(RH)
IC2 15P(RH)
ITC2 20PF
IR1 5.6K
IG2 KSC945Y
IL1 FM
IL2 LW
UR28 1.2K
UR27 1.2K
UC9 47P
UC8 47P
UC9 47P
UR5 33K
UR6 33K
UR UR7 UR8 1.2K
K4 K3 K2 K1 K0 K08 K07 K06 K05
K00 K01 K02 K03 K04

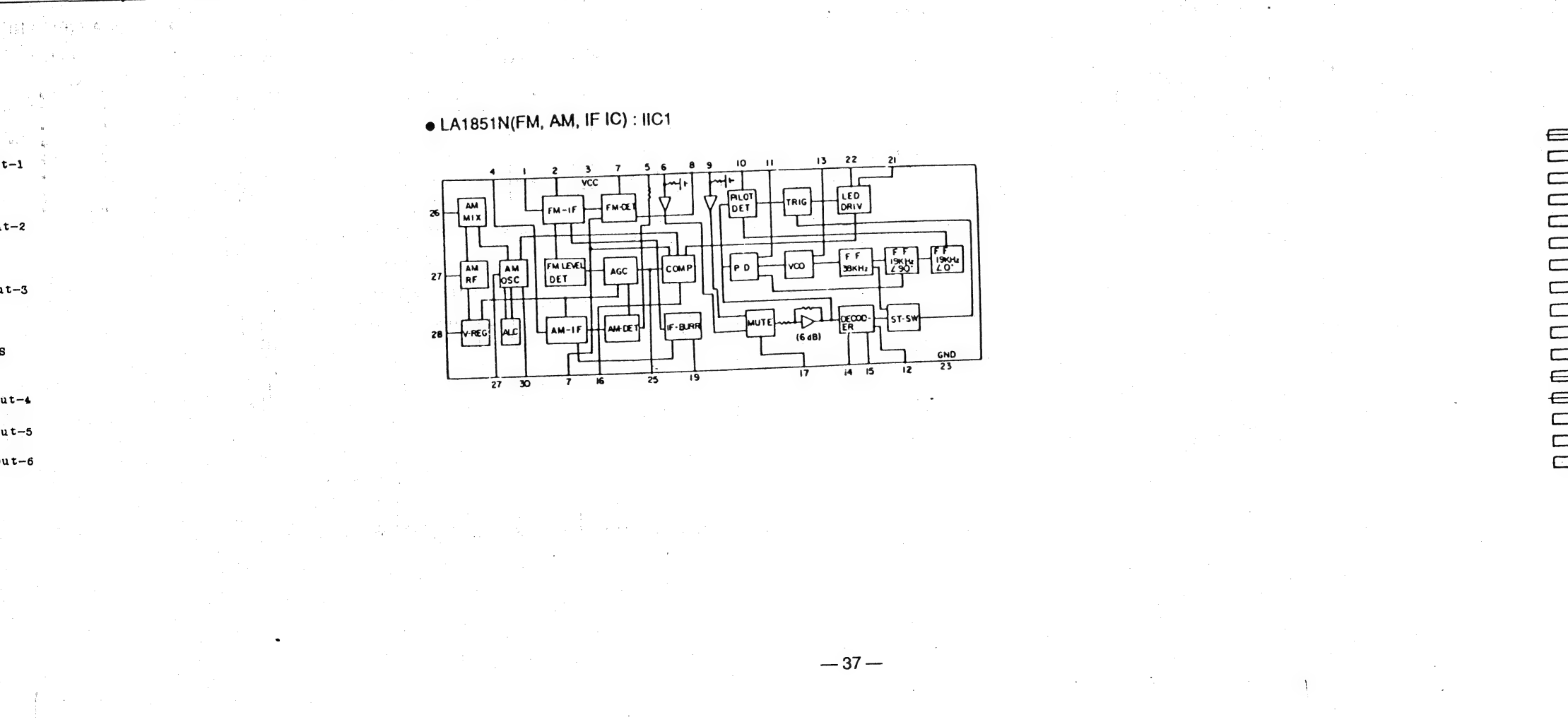
● TC 9135 (SW-IC) : UIC3

GND	1	16	V_{DD}
Out-1	2	15	IN-1
Out-2	3	14	IN-2
Out-3	4	13	IN-3
Out-4	5	12	IN-4
Out-5	6	11	IN-5
Out-6	7	10	IN-6
6/3	8	9	KS









● LA1851N(FM, AM, IF IC) : IIC1

G | H | I | J | K | L | M | N | O

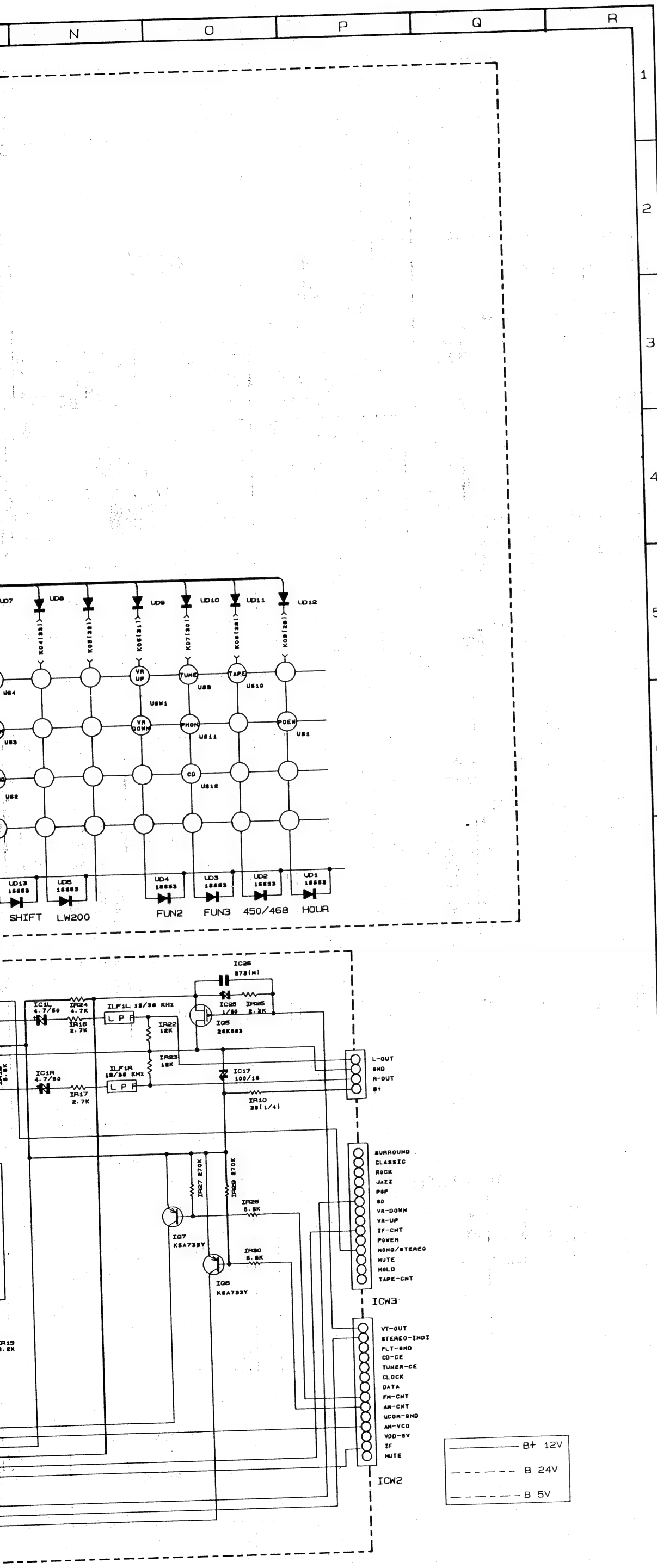
FRONT PCB

UFL1 SVA 13BS05(VFD)

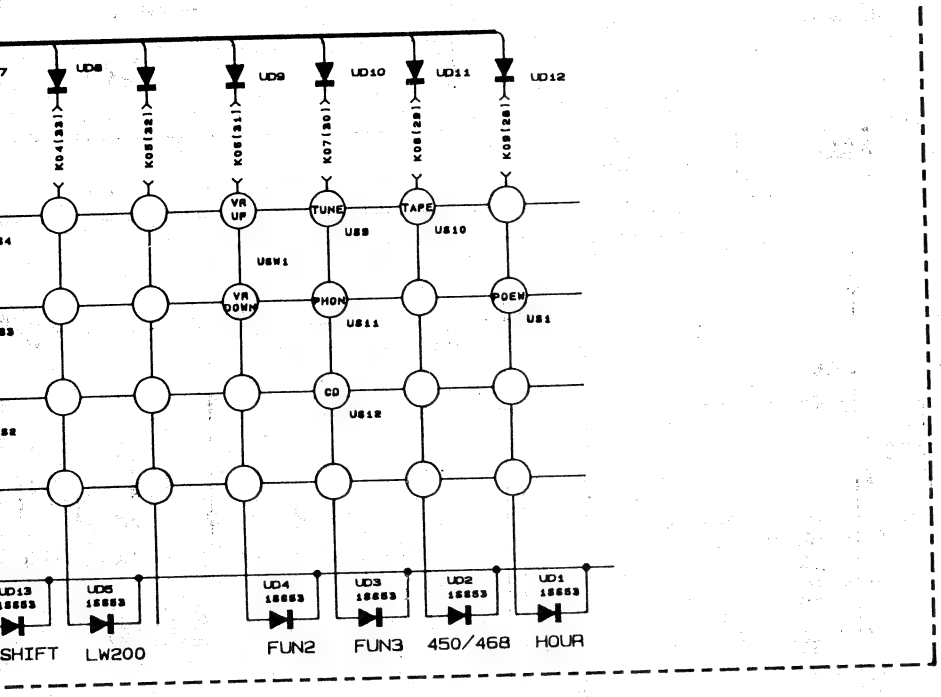
UL1 470uH
UC15 100/16
UC11 104
UC13 104
UC16 104
UC3 104
UR4 180(1/4)
UC10 0.047F
FM OSC
UC1 104
UIC2 MSC7110
UC14 1/50
UR10 47K
UC12 100
UR40 100
UR41 100
UR42 100
UR43 100
8805
ULD3 TUNER
ULD4 TAPE
ULD5 PHONO
ULD6 CD
UD5
UD6
UD7
UD8
UD9
UD10
UD11
UD12
UD16 1S953
UD15 1S953
UD14 1S953
UD13 1S953
UD5 1S953
UD4 1S953
UD3 1S953
UD2 1S953
UD1 1S953
UR1 33K
B2
B1
B0
SHIFT
LW200
FUN2
FUN3
450/468
HOUR

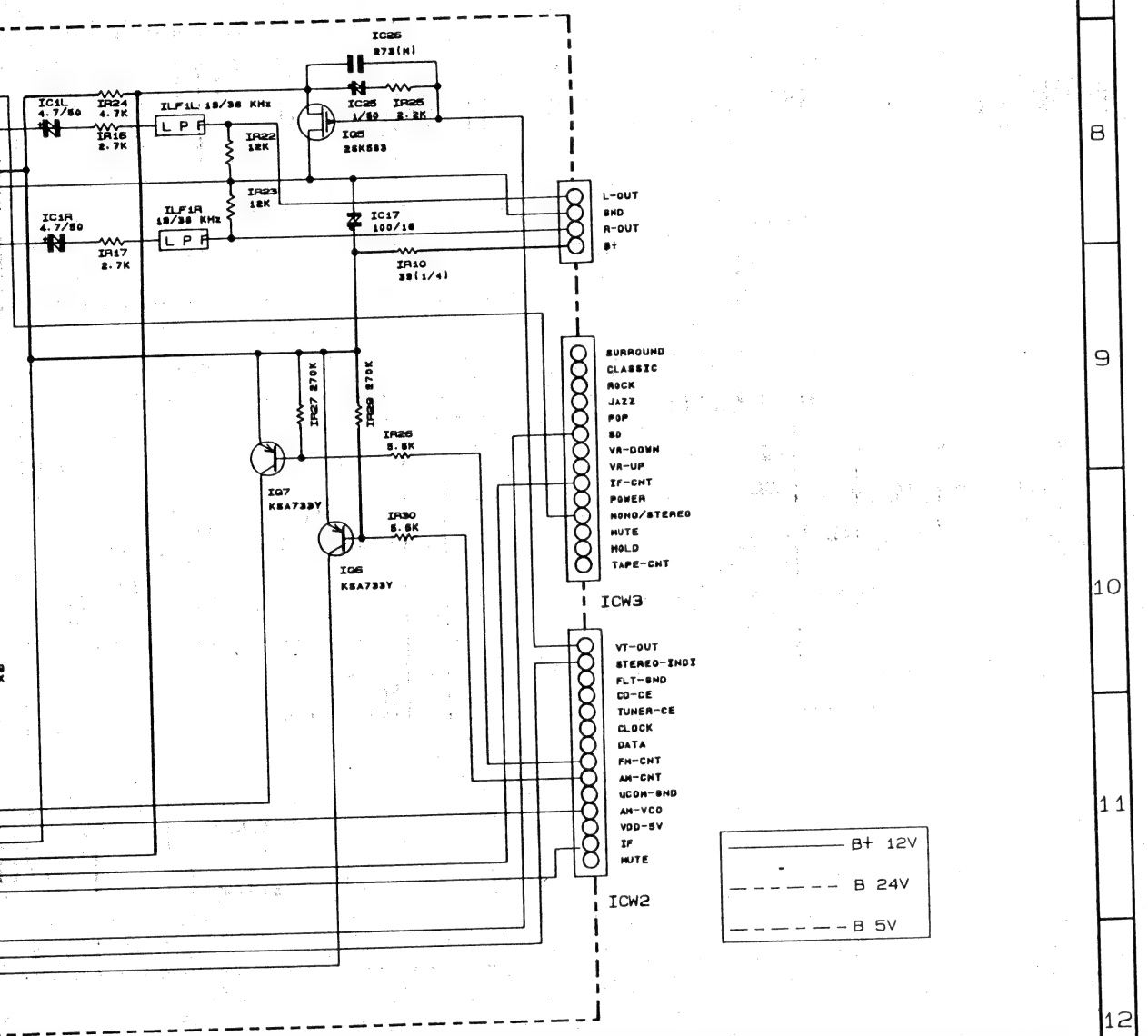
MAIN PCB

FCN1 FM IF CABLE
FM FRONT END PACK
IIC1 LA1851N
IQ1 KSC945Y
IQ2 KSC945Y
IQ3 KSR2004
IQ4 KSR1003
IQ5 2SK583
IQ6 KSA733Y
IQ7 KSA733Y
FC1 223
FC2 223
FC7 47/16
FC8 10/16
FC9 223
FC10 223
FC11 1/50
FC12 1/50
FCF1 10.7MHz
FCF2 10.7MHz
FG1 KSC9380
IC4 473
IC5 223M
IC6 153M
IC8 100P
IC9 10/16
IC10 1/50
IC11 3.3/50
IC12 1/50
IC13 103K
IC14 103K
IC15 10/50
IC16 223
IC17 100/16
IC18 223
IC20 100P
IC21 100P
IC22 33P
IC25 1/50
IC26 273(N)
IC27 100P
IC28 220P
IL1 60PF
IL2 LW
IL3 270UH
IT1 AMIF
IT2 FM/DET
IVR1 5KB
IVR2 50KB
OC1 470(P)
OC2 360(P)
OC3 68(RH)
OC4 15P(RH)
OC5 473
OC6 473
OC10 223M
OTC1 20PF
OTC2 20PF
OVVC1 KV1234
IC1 8P(RH)
ITC2 20PF
IC2 15P(RH)
OR1 100K
OR2 5.6K
IR1 5.6K
IR2 5.6K
IR3 100K
IR4 3.3K
IR5 10K
IR6 10K
IR7 10K
IR8 10K
IR9 10K
IR10 39(1/4)
IR11 12K
IR12 5.6K
IR13 3.3K
IR14 3.3K
IR15 5.6K
IR16 5.6K
IR17 2.7K
IR18 5.6K
IR19 5.6K
IR20 10K
IR22 12K
IR23 12K
IR24 4.7K
IR25 2.2K
IR26 5.6K
IR27 270K
IR28 270K
IR30 5.6K
IC1L 4.7/50
IC1R 4.7/50
IR16 2.7K
ILF1L 10/38 KHz
ILF1R 10/38 KHz
L P F
FR1 15K
FR2 330
FR3 330
FR4 10K
FR5 2.2K
FR6 220
FR7 330
FR8 2.2K
OL1 HW
OL2 LW
OQ1 KSC945Y
FM IF
BY PASS
VCC
FM AFC
AM DET
AM DET
FM DET
FM DET
FM DET
VCO
PLL
BEN8 CNT
VCO
L-OUT
R-OUT
AM BB
AM OSC
RES
AM RF
AM MIX
AGC
AM IF
GND
ST
SD
RESET
IF
AM/FM
MUTE
FM BB
NC
NC
VR/UP
VR/DN
LW
SW
LDP
VTR1
VTR2
NC
K00
K01
K02
K03
K04
K0
K08
K07
K06
K05
K00(37)
K01(36)
K02(35)
K03(34)
K04(33)
K05(32)
K06(31)
K07(30)
K08(29)
K09(28)
X0(26)
X1(25)
X2(24)
X3(23)
X4(6)
TU UP
TU DN
CH UP
CH DOWN
VR UP
VR DOWN
TUNE
PHON
TAPE
CD
AUX
MEMO
BAND
A0/S
USW1
US7
US6
US4
US3
US5
US2
US8
US11
US10
US12
US1
FM SS
FM DEC
FM SD
FM MUTE
FM IF
FM AFC
AM DET
AM IF
AM/FM
MUTE
FM SS
AM SS
AM OSC
AM RF
AM MIX
AGC
RESET
IF

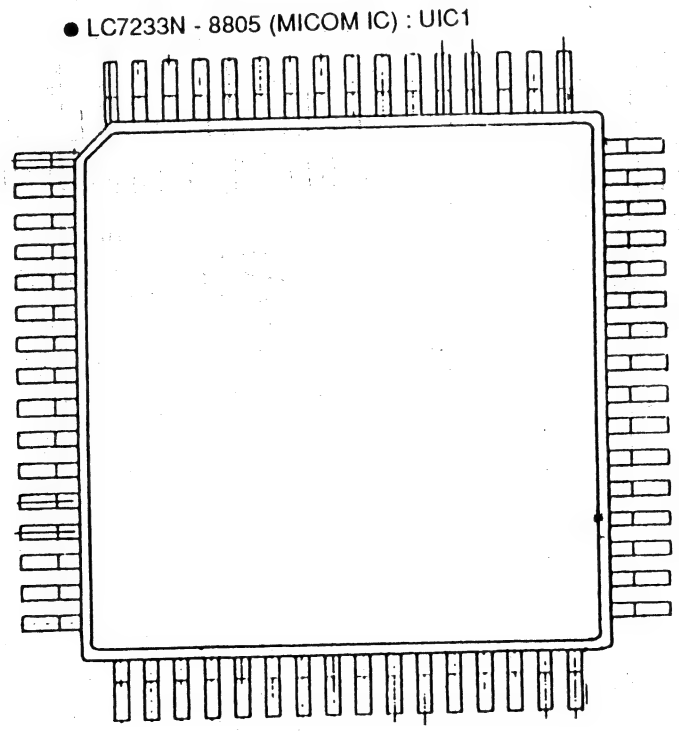


● IC LOCATION
UIC1 (LC7233N-8805) : G4
UIC3 (TC9135AP) : C10
UIC2 (MSC7110) : K4
IIC1 (LA1851N) : K10

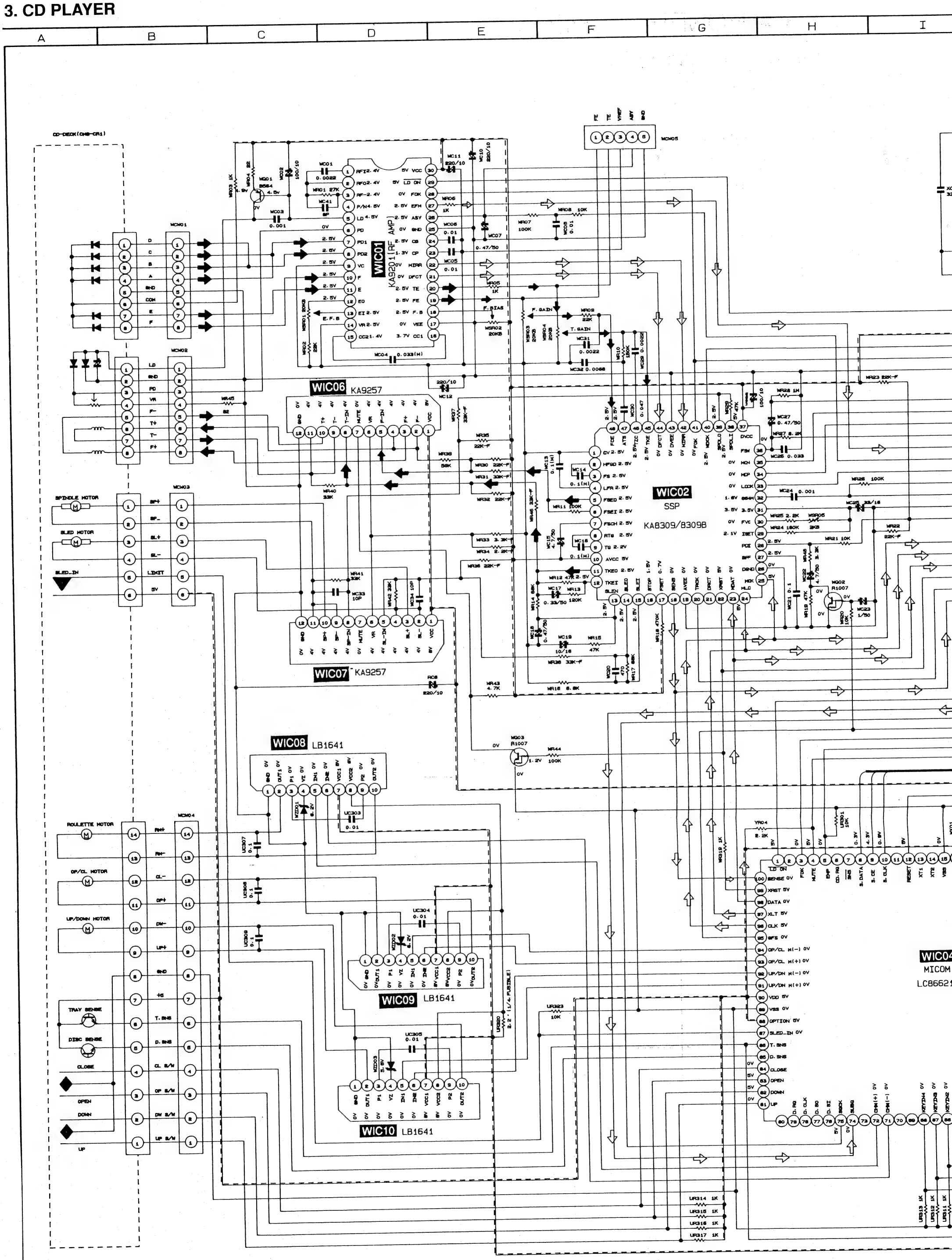




● LC7233N - 8805 (MICOM IC) : UIC1

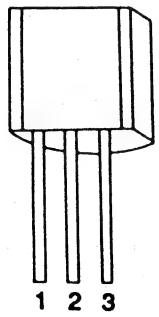


3. CD PLAYER


CD-DECK(CMB-CR1)
WIC01
KA9201(RF AMP)
WIC02
SSP
KA8309/8309B
WIC06 KA9257
WIC07 KA9257
WIC08 LB1641
WIC09 LB1641
WIC10 LB1641
WIC04
MICOM
LC86621
SPINDLE MOTOR
SLED MOTOR
SLED_IN
ROULETTE MOTOR
OP/CL MOTOR
UP/DOWN MOTOR
TRAY SENSE
DISC SENSE
CLOSE
OPEN
DOWN
UP
WCN01
WCN02
WCN03
WCN04
WCN05

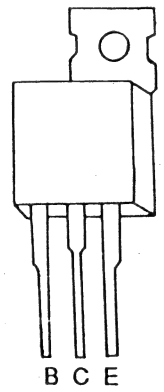
■ IC & TR INTERNAL DIAGRAM

● TR

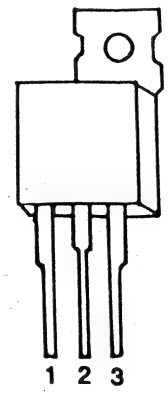


TR	1	2	3
KSR2003 KSR1003,KSR1007	E	C	B
KSB564,KSC945 KSA733	E	B	C
MC78L05	OUT	GND	IN

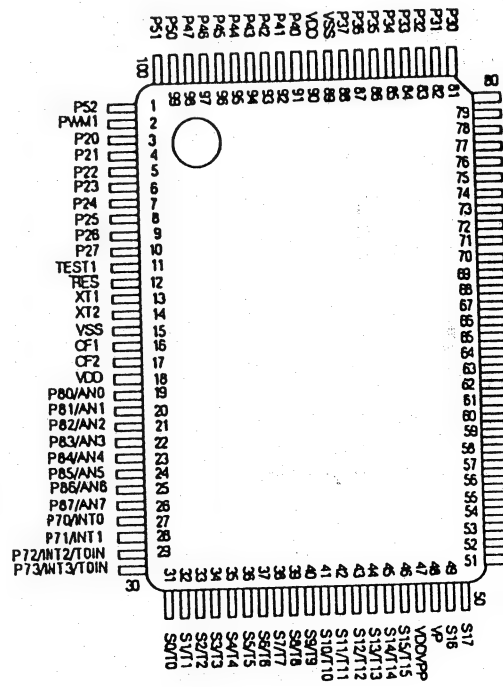
● TR : KSA614



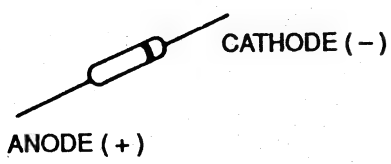
● MC7805, MC7808
(REGULATOR IC)
: WIC15



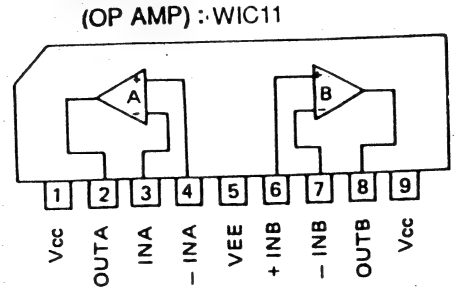
● LCA866216A (MICOM IC) : WIC04



● 1N4148M, 1N4001, 1SS53, ZENER DIODE



● NJM2068SD
(OP AMP) : WIC11



WIC03
DSP
KS5990/5990B

WIC04
MICOM
LC866216A

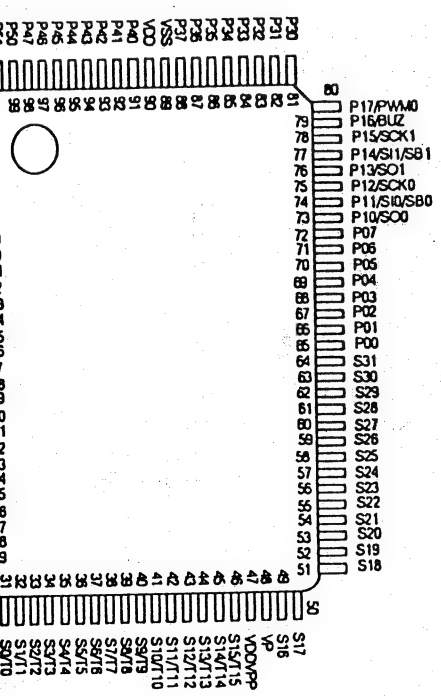
DISPLAY WFL01 SVA-10SS02

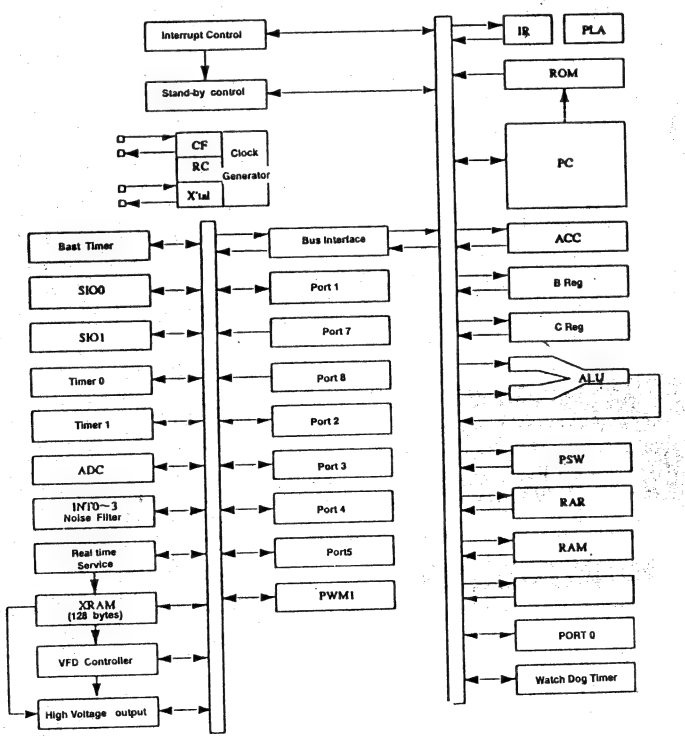
WIC16 7808
WIC15 7805
WIC14 7808

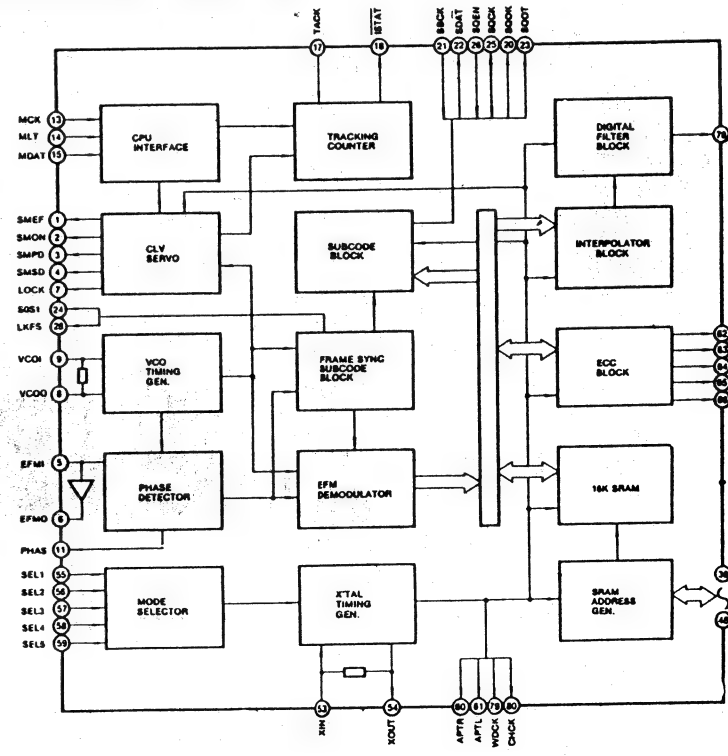
INTRO-SCAN | PROGRAM | B. SKIP/SEARCH | F. SKIP/SEARCH | PLAY/PAUSE
+10 | DISC4 | DISC3 | DISC2 | DISC1
RANDOM | REPEAT | DISC SKIP | DISC 5
STOP/CLEAR | DISPLAY | OP/CL

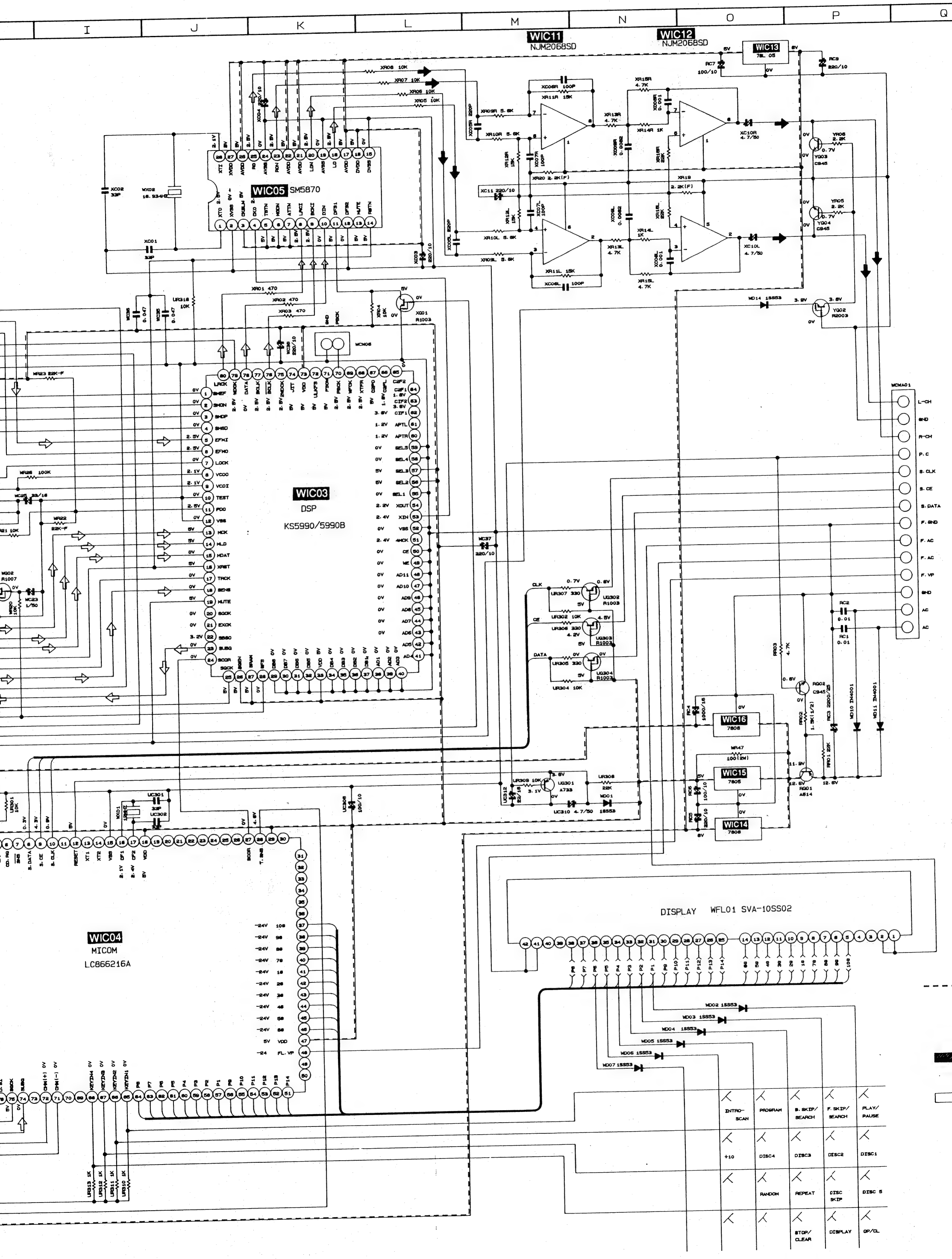
● KS5990/5990B (DIGITAL SIGNAL PROCESSOR) : WIC03

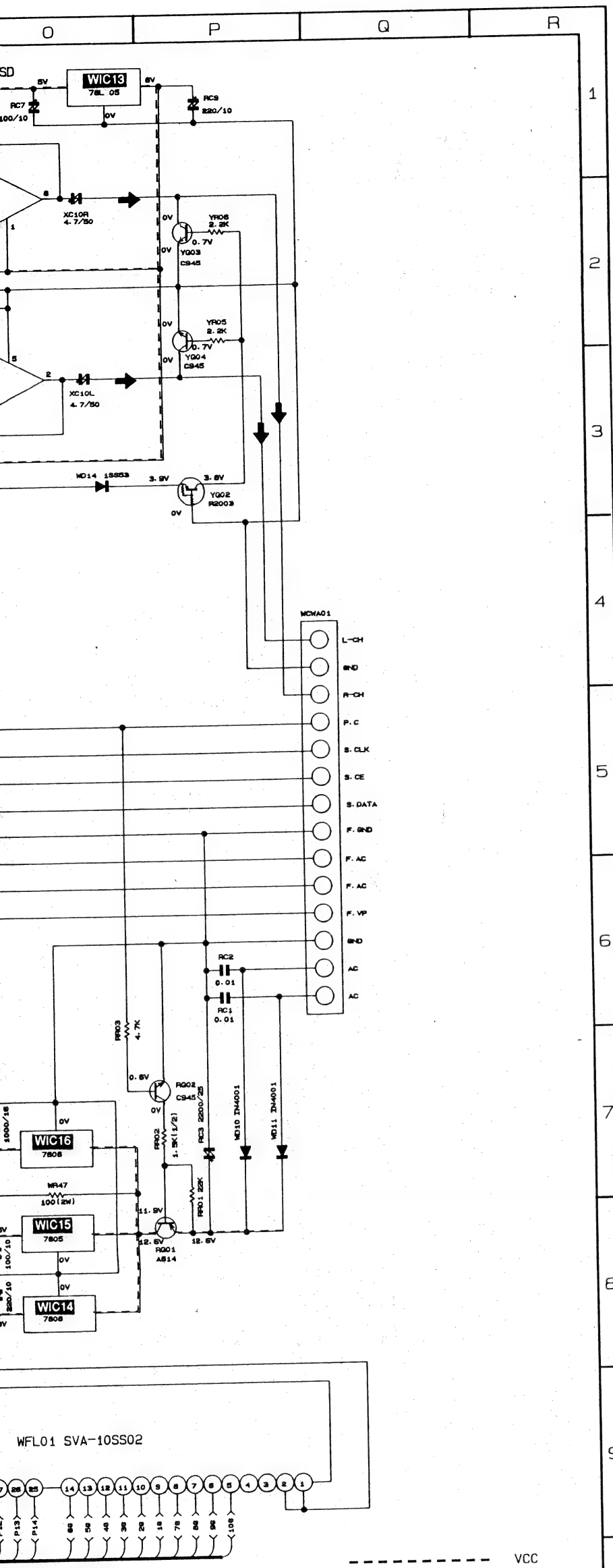
A (MICOM IC) : WIC04








WIC11
NJM2068SD
WIC12
NJM2068SD
WIC13
78L 05
WIC05 SM5870
WIC03
DSP
KS5990/5990B
WIC04
MICOM
LC866216A
WIC16
7808
WIC15
7805
WIC14
7808
DISPLAY WFL01 SVA-10SS02
WCWA01
L-CH
GND
R-CH
P.C
S.CLK
S.CE
S.DATA
F.GND
F.AC
F.AC
F.VP
GND
AC
AC
INTRO-SCAN
PROGRAM
B.SKIP/SEARCH
F.SKIP/SEARCH
PLAY/PAUSE
+10
DISC4
DISC3
DISC2
DISC1
RANDOM
REPEAT
DISC SKIP
DISC 5
STOP/CLEAR
DISPLAY
OP/CL



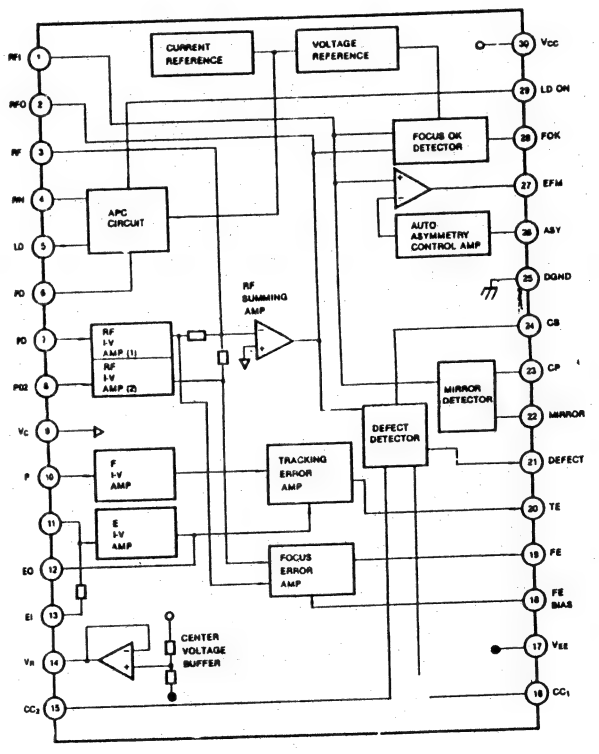
- IC

WIC01	D3
WIC02	G5
WIC03	K5
WIC04	I9
WIC05	K2
WIC06,07	D4,D3
WIC08,09,10	C7,D9,D10
WIC11,12	M1.N1
WIC13	O1
WIC14,16	O8,O7
WIC15	O8

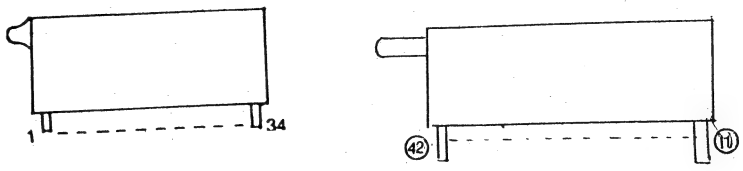
- TR

RQ,Ø1	P8
UQ3Ø1	M8
WQØ1	C2
RQØ2,YQØ3,Ø4	P7,P2
YQØ2	P3
XWØ1,UQ3Ø2,3Ø3,3Ø4	L3,N6,N7
WQØ2,Ø3	H6,E7

- KA9201(RF AMP) : WIC01

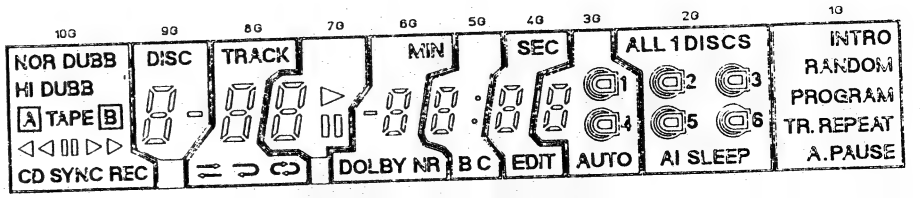


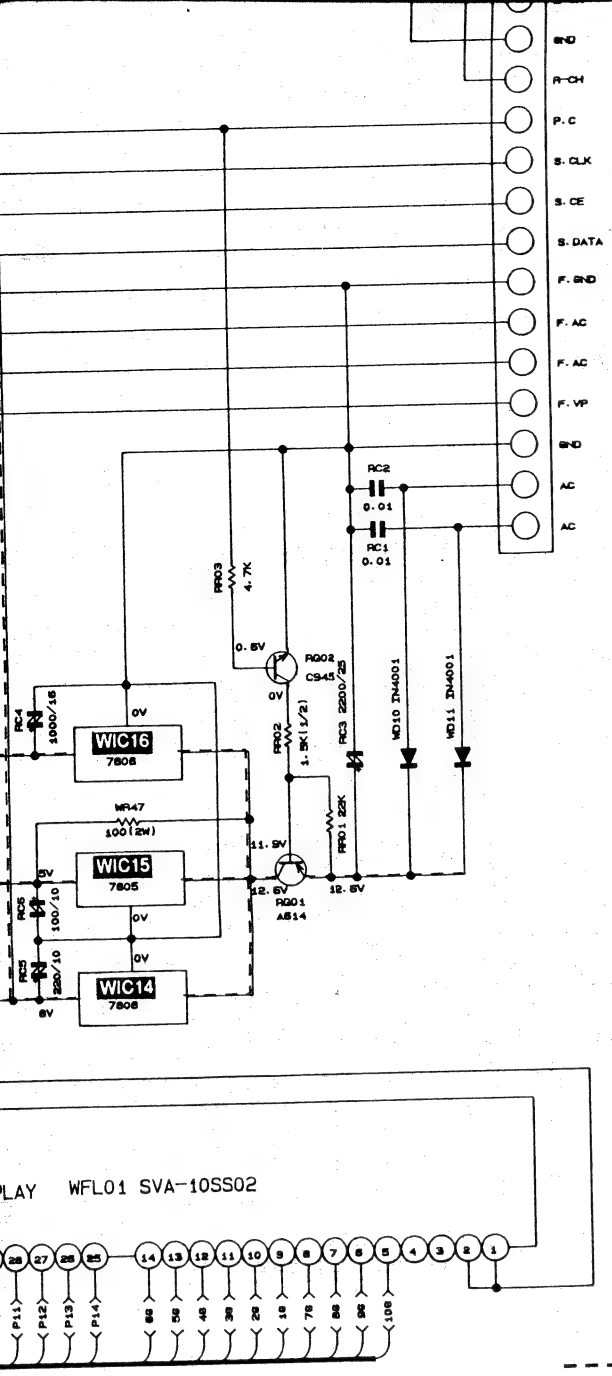
- I/O BT - 100GK (V.F. DISPLAY) : WFL01



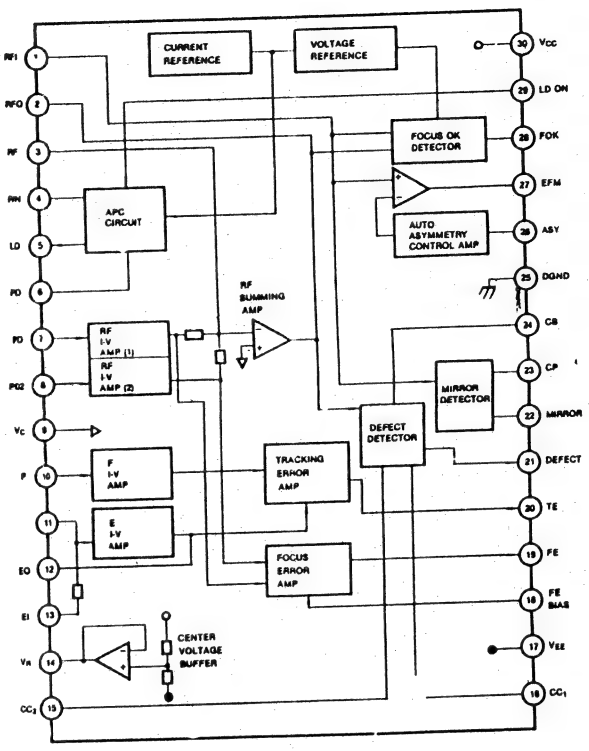
PIN CONNECTION

PIN NO	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	NP	P8	P7	P6	P5	P4	P3	P2	P1	P9	P10	P11	P12	P13	P14	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	6G	5G	4G	3G	2G	1G	7G	8G	9G	10G	NP	NP	F1	F1



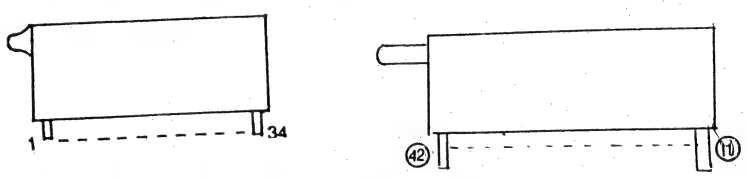


5 6 7 8 9 10 11 12



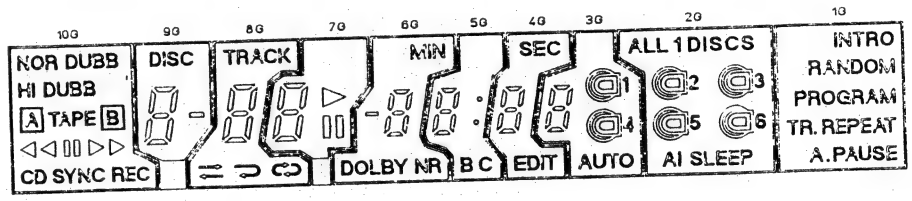
● KA9201(RF AMP) : WIC01

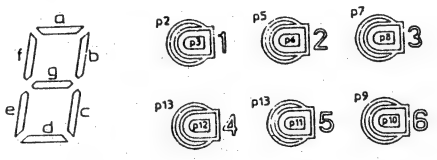
● I/O BT - 100GK (V.F. DISPLAY) : WFL01



PIN CONNECTION

PIN NO	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	NP	P8	P7	P6	P5	P4	P3	P2	P1	P9	P10	P11	P12	P13	P14	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	6G	5G	4G	3G	2G	1G	7G	8G	9G	10G	NP	NP	F1	F1

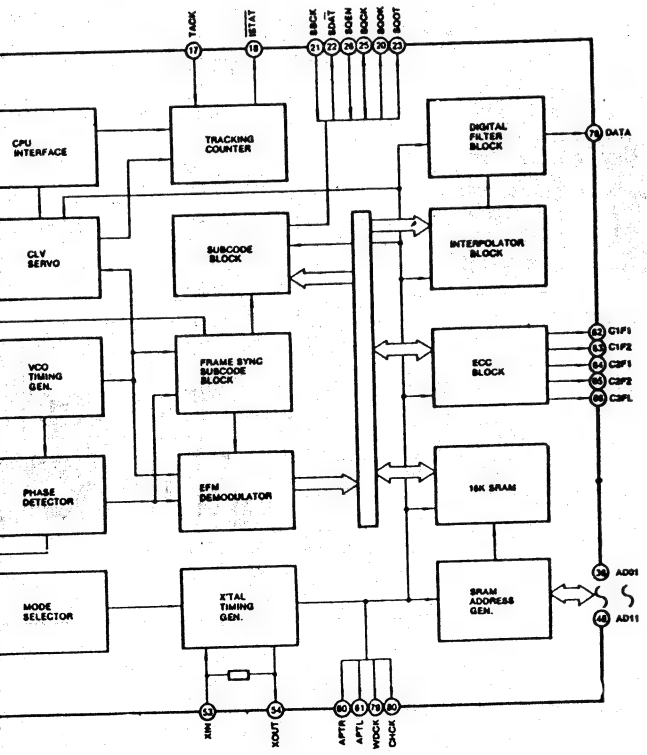




ANODE CONNECTION

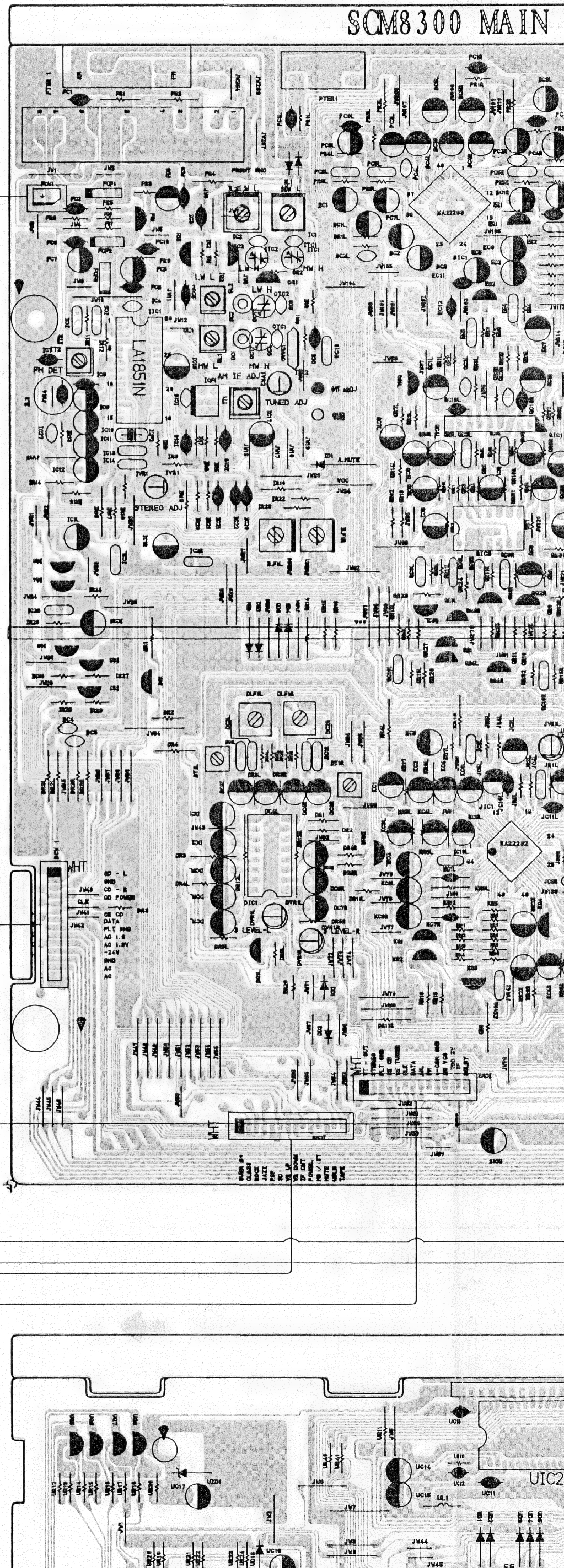
	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	NOR DUBB	DISC	TRACK	–	MIN	–	SEC	–	ALL	INTRO
P2	HI DUBB	–	–	–	–	–	–	◯1	1	–
P3	A TAPE B	–	–	–	–	–	–	▢	DISC	–
P4	▯ (3)	a	a	a	a	a	a	a	S	RANDOM
P5	▯ (9)	b	b	b	b	b	b	b	◯2	–
P6	◁ (3)	f	f	f	f	f	f	f	▢	–
P7	◁ (9)	g	g	g	g	g	g	g	◯3	–
P8	–	▭	–	▷	▭	:	–	–	▢	PROGRAM
P9	▯▯	c	c	c	c	c	c	c	◯6	–
P10	▷ (3)	e	e	e	e	e	e	e	▢	REPEAT
P11	▷ (9)	d	d	d	d	d	d	d	▢	–
P12	–	–	⊂⊃	▯▯	–	–	–	▢	–	←
P13	REC	–	⊃	–	–	C	–	◯4	◯5	TR.
P14	CD SYNC	–	⇄	–	DOLBY NR	B	EDIT	AUTO	AI SLEEP	A.PAUSE

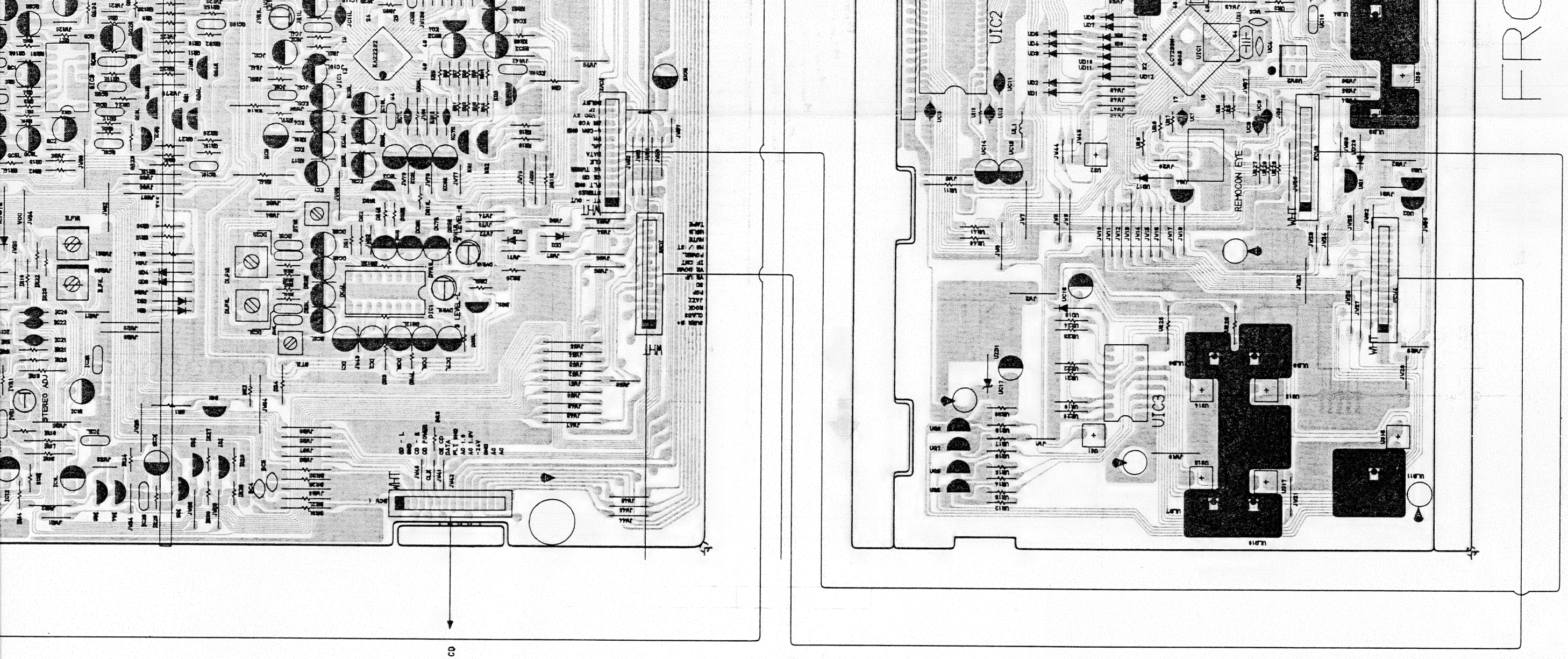
TAL SIGNAL PROCESSOR) : WIC03

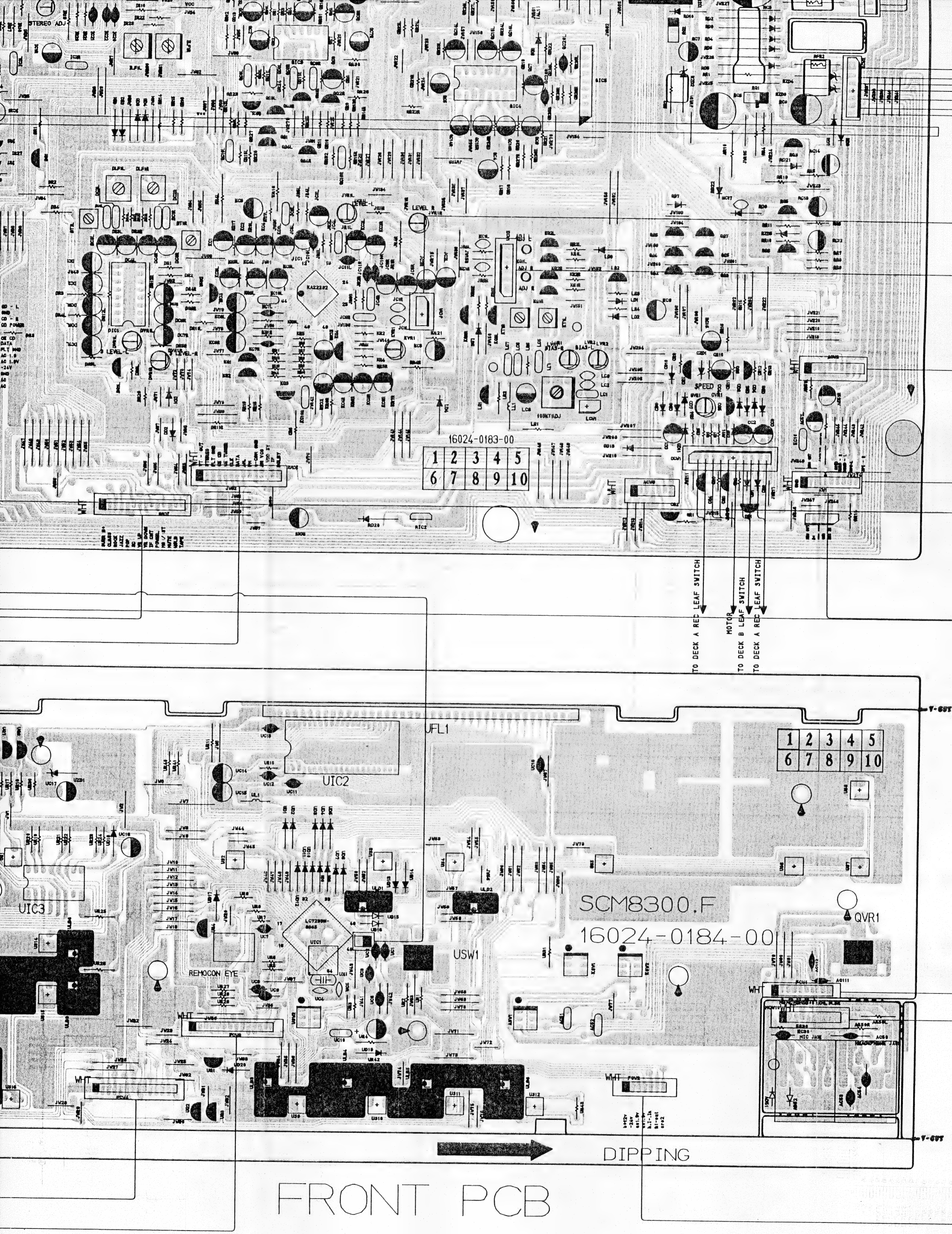


■ WIRING DIAGRAM

1. MAIN SECTION




FROM CD


16024-0183-00
1 2 3 4 5
6 7 8 9 10
TO DECK A REC LEAF SWITCH
MOTOR
TO DECK B LEAF SWITCH
TO DECK A REC LEAF SWITCH
V-OUT
UFL1
UIC2
UIC3
UIC1
USW1
SCM8300.F
16024-0184-00
QVR1
REMOCON EYE
SPEED
DIPPING
V-OUT

FRONT PCB

MAIN PCB

SCM8300 MAIN

S.T.PARK
J.G.HAN

250V T 630mA

250V T 1.25A

LA1851N

KA22292

KA22292

16024-0183-00

1	2	3	4	5
6	7	8	9	10

TO DECK A REC LEAF SWITCH

MOTOR

TO DECK B LEAF SWITCH

TO DECK A REC LEAF SWITCH

V-OUT

UFL1

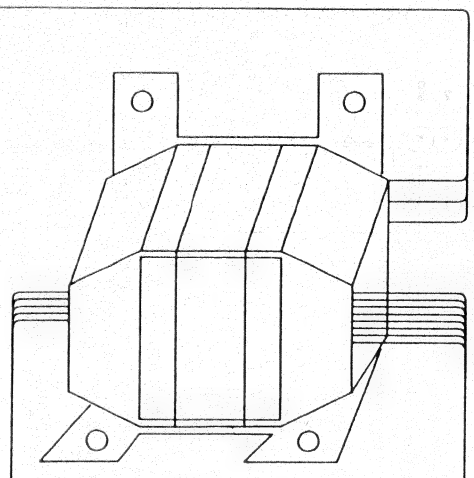
UIC2

1	2	3	4	5
6	7	8	9	10

N PCB

POWER CORD

POWER TRANS



S.T.PARK
J.G.HAN

250V T 630mA

250V T 1.25A

TO DECK A HEAD

TO DECK B HEAD

16024-0183-00

1	2	3	4	5
6	7	8	9	10

TO DECK A REC LEAF SWITCH

MOTOR

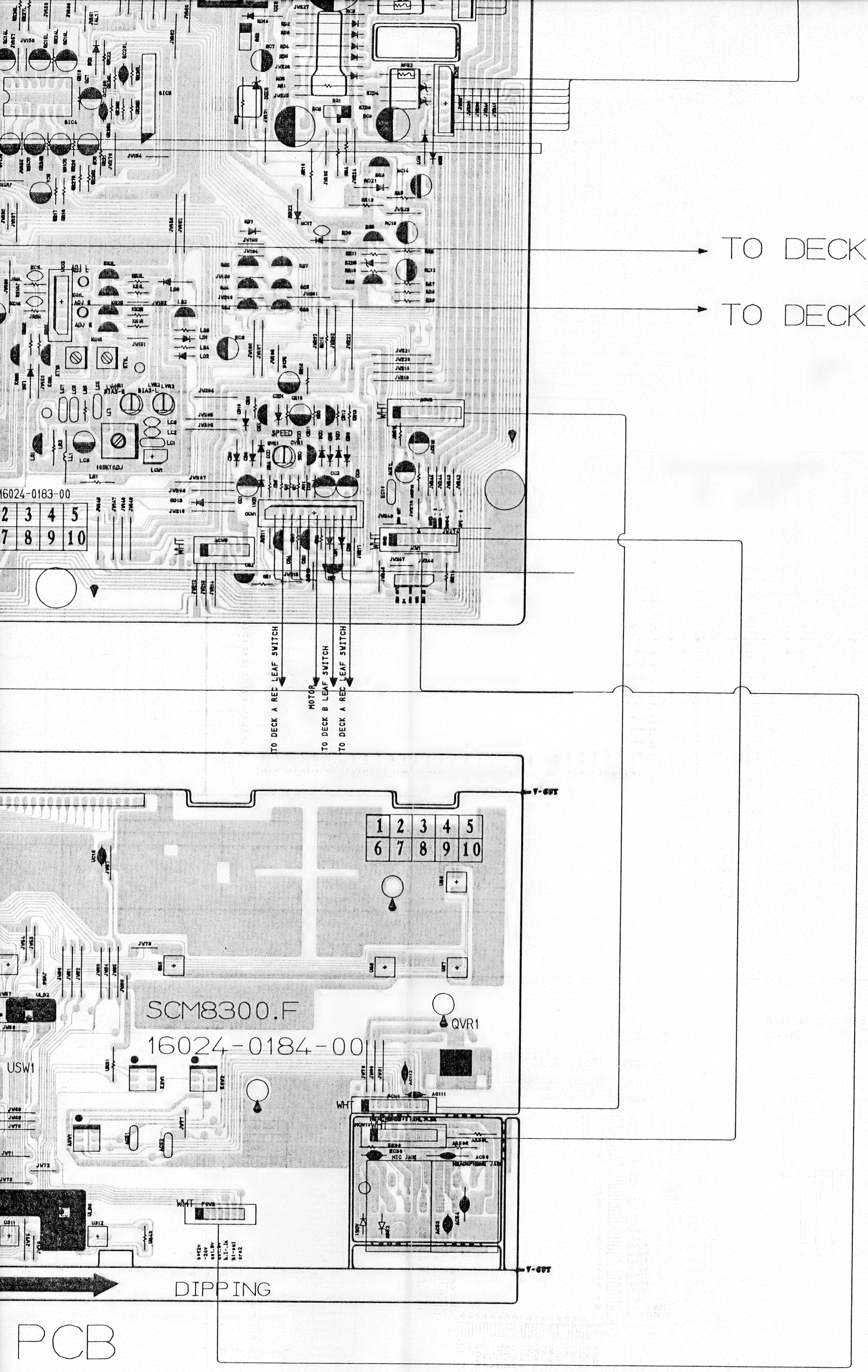
TO DECK B LEAF SWITCH

TO DECK A REC LEAF SWITCH

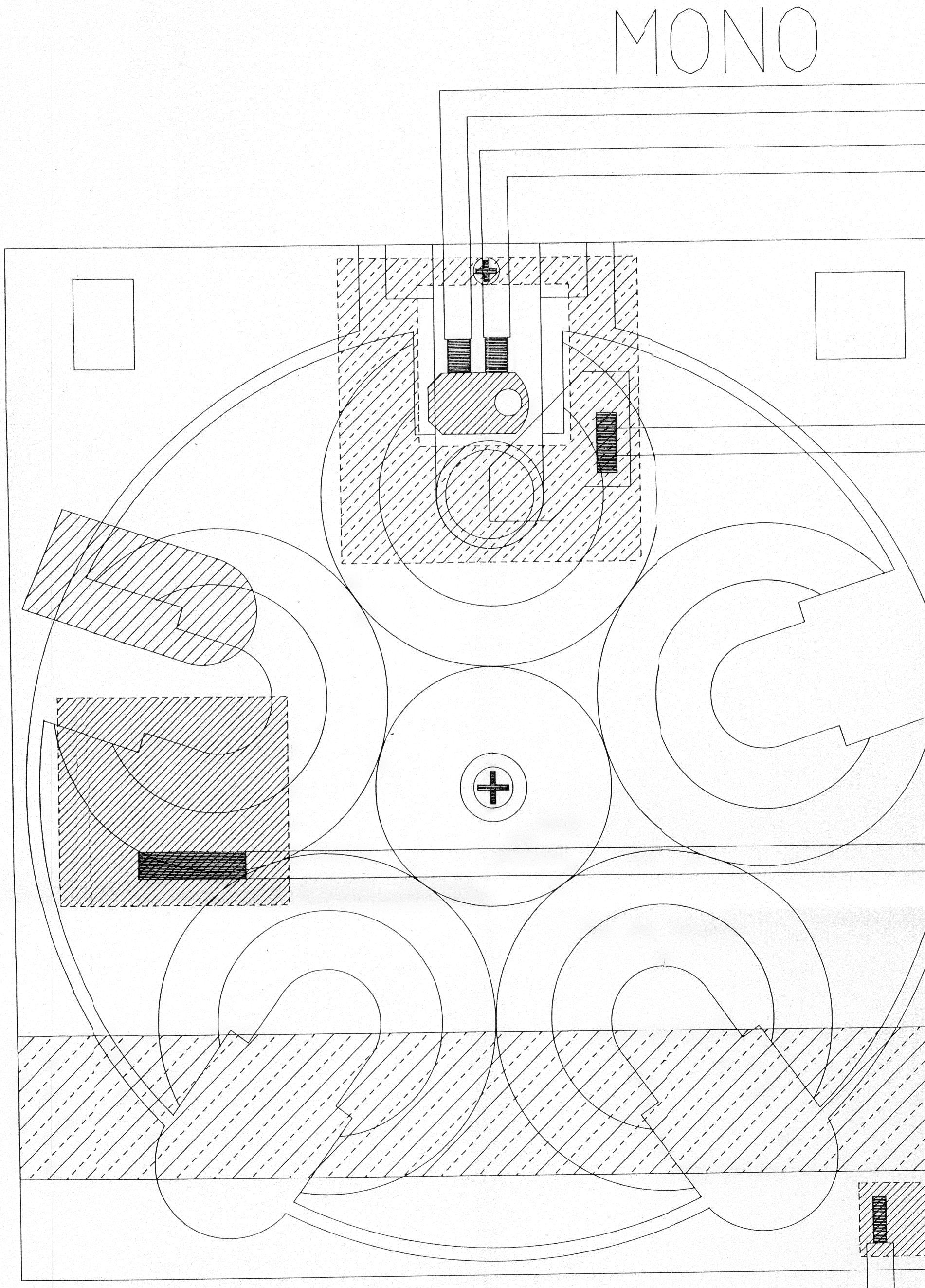
V-OUT

UFL1

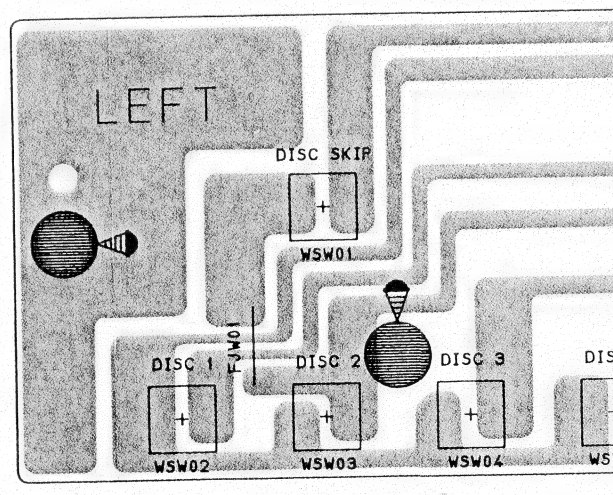
1	2	3	4	5
6	7	8	9	10


TO DECK A HEAD
TO DECK B HEAD
TO DECK A REC LEAF SWITCH
MOTOR
TO DECK B LEAF SWITCH
TO DECK A REC LEAF SWITCH
V-OUT
SCM8300.F
16024-0184-00
QVR1
USW1
V-OUT
DIPPING
PCB

2. CD PLAYER

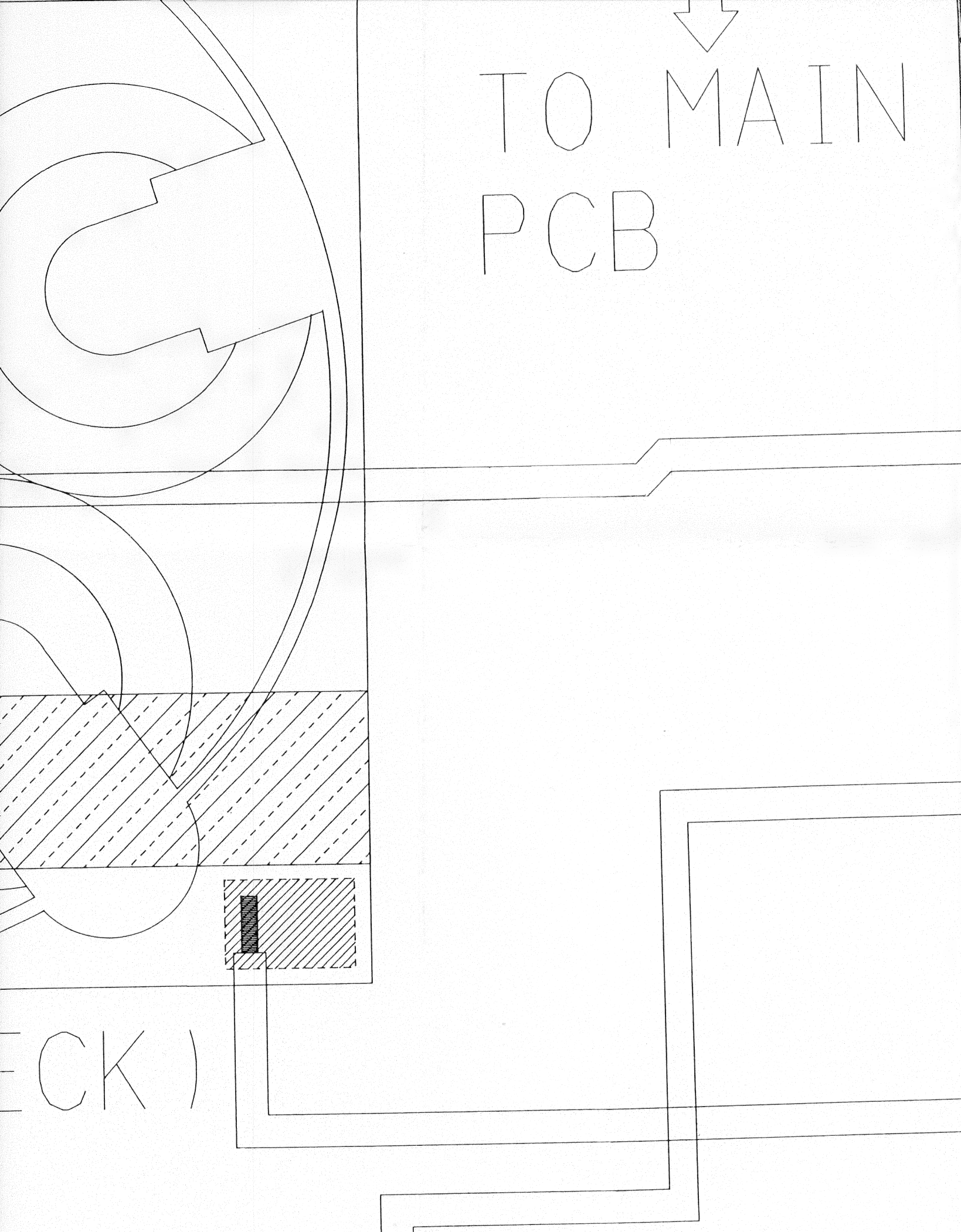


(CD - CHANGER DECK)

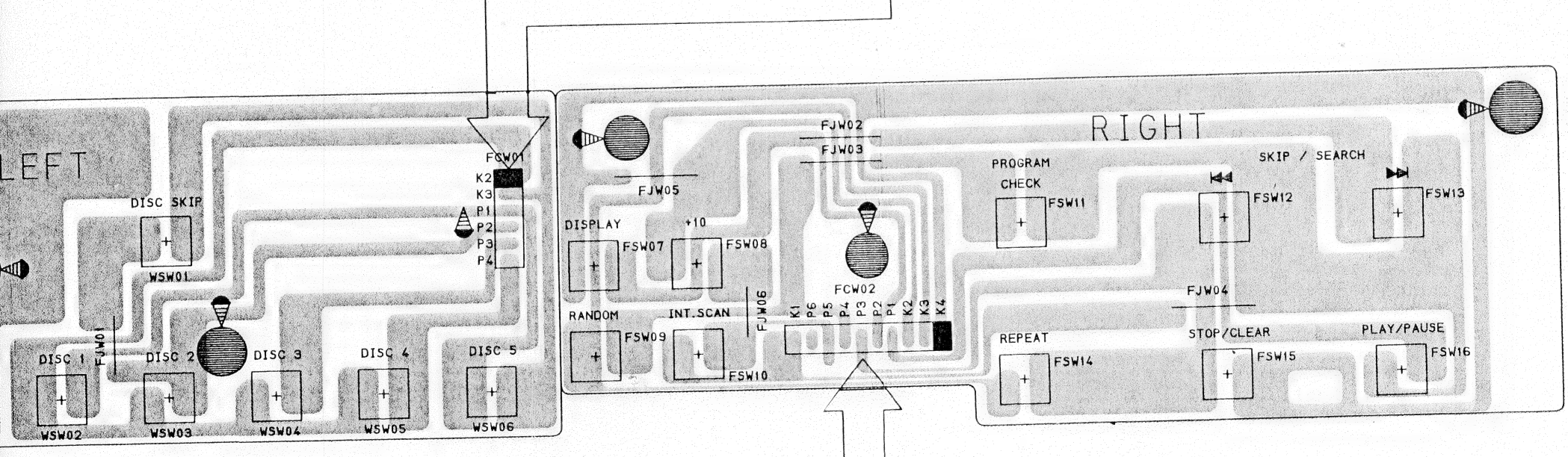


(CD FRONT

TO MAIN PCB



(CD CHECK)



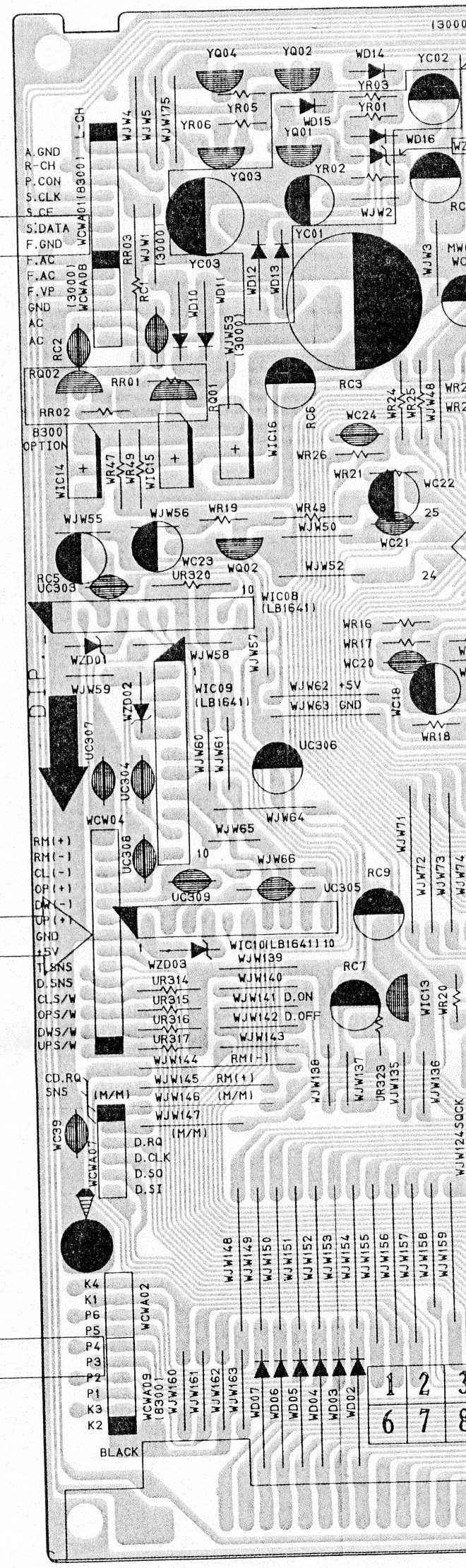
(FRONT PCB)

ONO

SHIELD

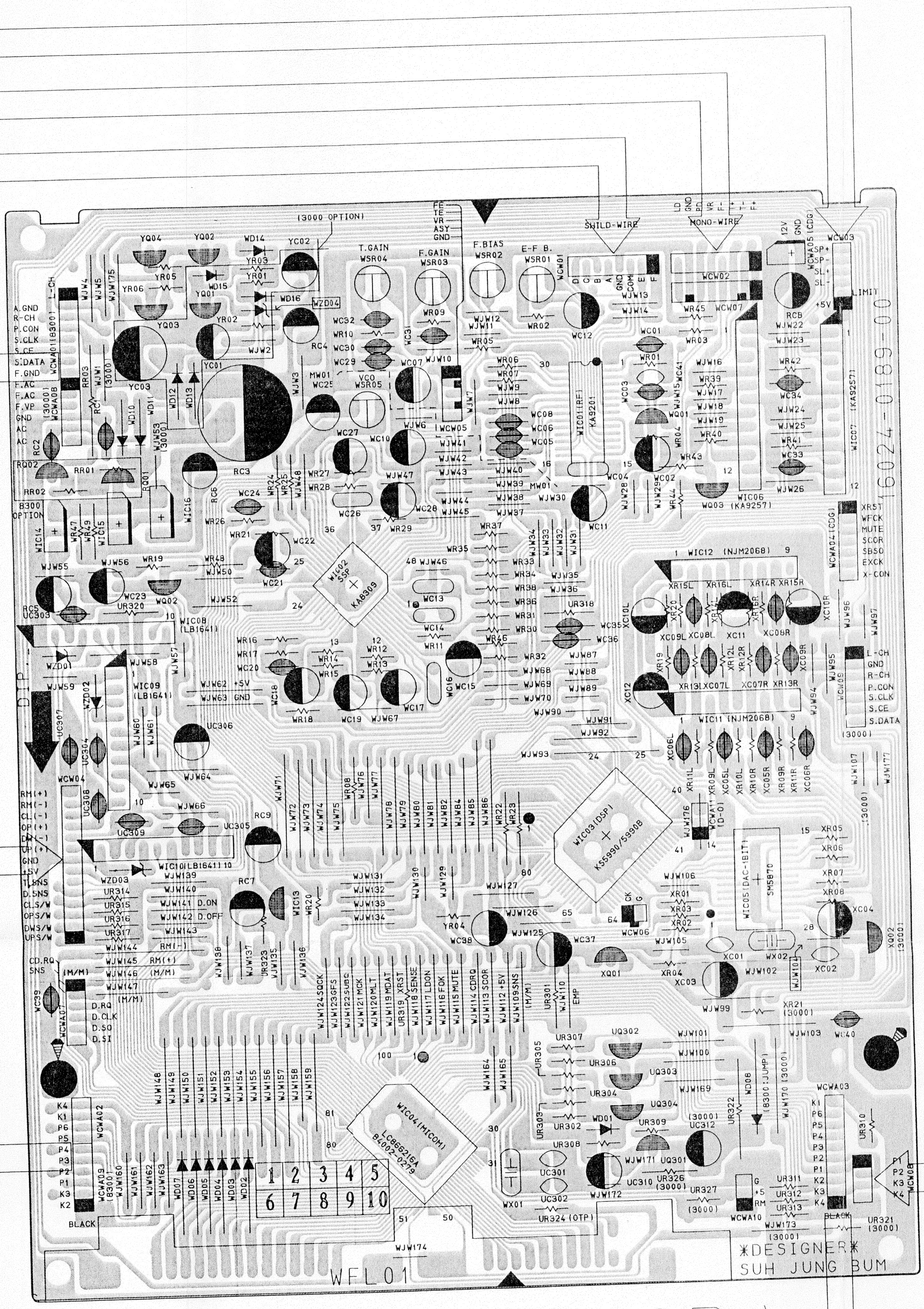
TO MAIN

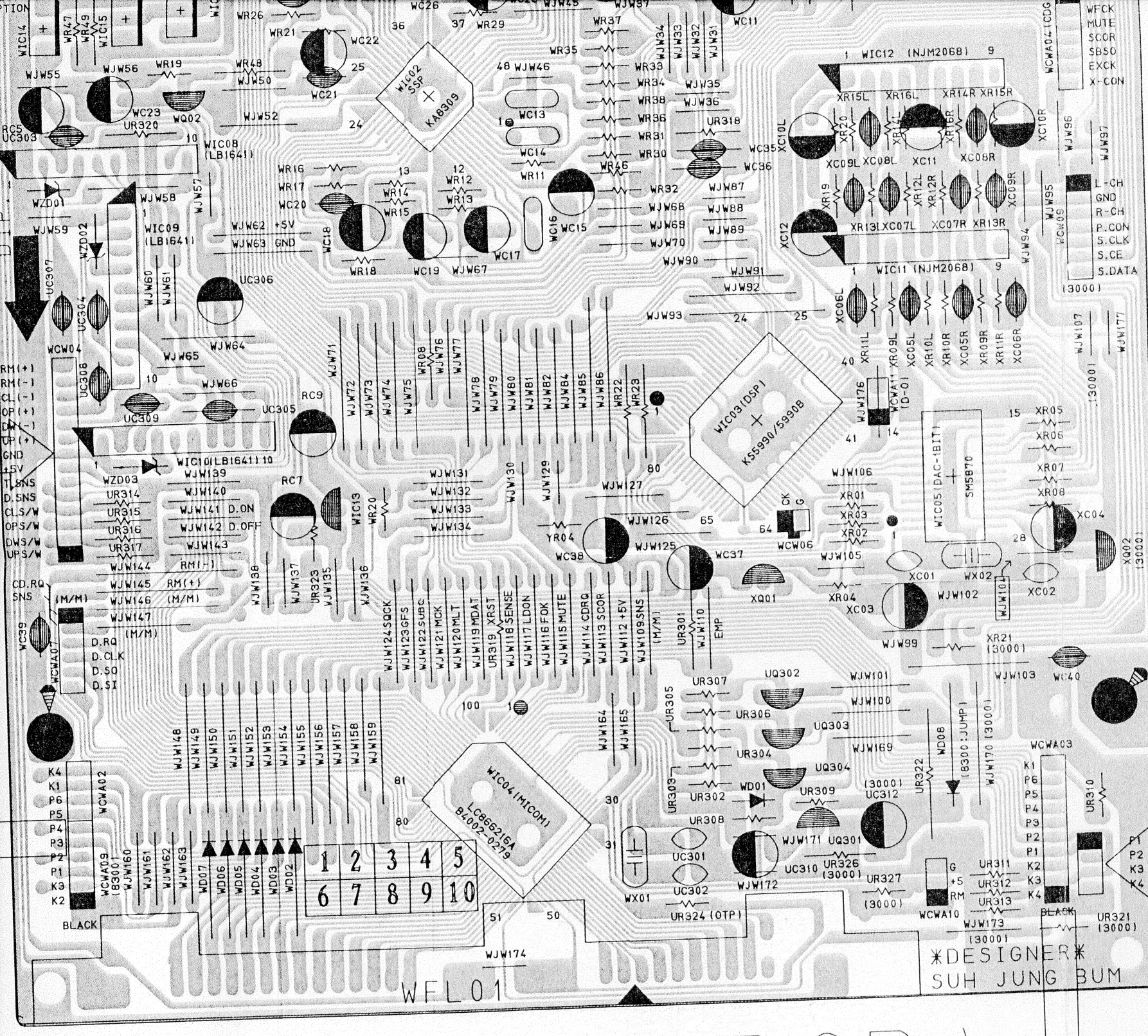
PCB



CK)

(CD


6024-0189-00
WFL01
DESIGNER
SUH JUNG BUM
WIC01(RF) KA9201
WIC02 SSP KA8309
WIC03(DSP) KS5990/5990B
WIC04(MICOM) LC866216A 84002-0279
WIC05(DAC-1BIT) SM5870
WIC08 (LB1641)
WIC09 (LB1641)
WIC10(LB1641)
WIC11 (NJM2068)
WIC12 (NJM2068)
WIC14
WIC16
WIC07 (KA9257)
WIC06 (KA9257)
(3000 OPTION)
8300 OPTION
SHILD-WIRE
MONO-WIRE
LIMIT
T.GAIN
F.GAIN
F.BIAS
E-F B.
A.GND
R-CH
P.CON
S.CLK
S.CE
S.DATA
F.GND
F.AC
F.VP
GND
AC
+5V
D.SNS
CL.S/W
OP.S/W
DW.S/W
UP.S/W
CD.RQ
SNS
D.RQ
D.CLK
D.SO
D.SI
SP+
SP-
SL+
SL-
L-CH
GND
R-CH
P.CON
S.CLK
S.CE
S.DATA
XRST
WFCK
MUTE
SCOR
SBSO
EXCK
X-CON
BLACK
(CD MAIN PCB)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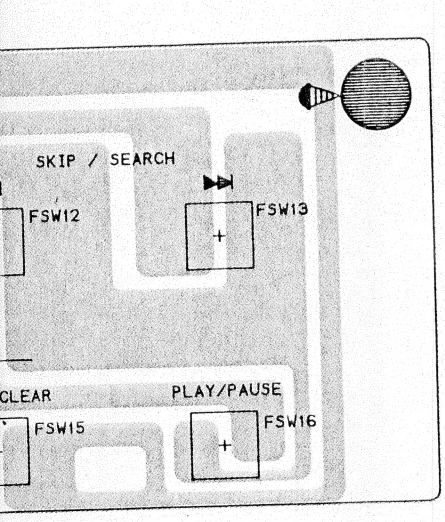
X-CON
L-CH
GND
R-CH
P.CON
S.CLK
S.CE
S.DATA
DESIGNER
SUH JUNG BUM
WFL01

(CD MAIN PCB)


SKIP / SEARCH
FSW12
FSW13
CLEAR
PLAY/PAUSE
FSW15
FSW16

■ ABBREVIATION LIST

AC	:	Alternating Current)
Addr	:	Address
ADJ.	:	Adjustment)
AGC	:	Automatic Gain Control
ALC	:	Automatic Level Control
AM	:	Amplitude Modulation
AMP	:	Amplifier
AMPS	:	Automatic Music program Search
ANT	:	Antenna
ASSY	:	Assembly
BAL	:	Balance
BLK	:	BlacK
BLU	:	Blue
BPF	:	Band Pass Filter
BRKT	:	Bracket
CD	:	ComPack Disc
CF	:	Ceramic Filter
ch	:	channel
cm	:	centimeter
COM	:	Common
CON MIC	:	Condenser Microphone
D	:	Depth
D/A Convertor	:	Digital/Analog Convertor
dB	:	deciBel
DC	:	Direct Current
DEC	:	Decoder
DET	:	Detector
DEV	:	Deviation
DSP	:	Digital Signal Processor
DTS	:	Digital Tuning System
EA	:	Each
E-HEAD	:	Erase Head
EQ	:	Equalizer
FF	:	Fast Forward
F/F	:	Flip Flop
Fig.	:	Figure
FM	:	Frequency Modulation
FREQ.	:	Fequency
GND	:	Ground
GRN	:	Green)
GRY	:	Gray
H	:	Height, High
Hz	:	Hertz
IC	:	Integrated Circuit
IF	:	Intermediate Frequency
IFT	:	Intermediate Frequency Transformer
I/O	:	Input/Ouput
KHz	:	Killohertz
Kg	:	Killogram
L	:	Left, Low
LCD	:	Liquid Crystal Display
LED	:	Light Emitting Diode
LPF	:	Low Pass Filter
LW	:	Long Wave
Max	:	Maximum
MHz	:	Meghertz
Min	:	Minimum
MOD	:	Modulation
MPX	:	Multiplex
MW	:	Medium Wave)
NF	:	Negative Feedback
OP AMP	:	Operational Amplifer
ORG	:	Orange
OSC	:	Oscillator
PB	:	Playback
PCB	:	Printed Circuit Board
PLL	:	Phase Lock Loop
P/T	:	Power Transformer
R	:	Right
RAM	:	Random Access Memory
REC	:	Record
REG	:	Regulator
REW	:	Rewind
RF	:	Radio Frequency
ROM	:	Read Only Memory
R/P	:	Record/Play
sec	:	Second
SSG	:	Standard Signal Generator
SSP	:	Servo Signal Processor
ST	:	Stereo
ST/EJT	:	Stop/Eject
SW	:	Switch, Short wave
TP	:	Test Point
TR	:	Transistor
TRANS	:	Transformer
V	:	Volt
VIO	:	Violet
VCO	:	Voltage Controlled Oscillator
VOL	:	Volume
Vpp	:	Voltage peak to peak
VR	:	Volume
Vref	:	Reference Voltage
V/SEL	:	Voltage Selector
VTVM	:	Vaccum Tube Volt Meter
VVC	:	Voltage Variable Capacitance
W	:	Watt, Weight
WHT	:	White
X	:	Crystal
YEL	:	Yellow